



INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

We make Indiana a cleaner, healthier place to live.

Joseph E. Kernan
Governor

Lori F. Kaplan
Commissioner

November 10, 2003

100 North Senate Avenue
P.O. Box 6015
Indianapolis, Indiana 46206-6015
(317) 232-8603
(800) 451-6027
www.in.gov/idem

TO: Interested Parties / Applicant

RE: Jay County Landfill, Inc. / 075-17304-000029

FROM: Paul Dubenetzky
Chief, Permits Branch
Office of Air Quality

Notice of Decision: Approval - Effective Immediately

Please be advised that on behalf of the Commissioner of the Department of Environmental Management, I have issued a decision regarding the enclosed matter. Pursuant to IC 13-15-5-3, this permit is effective immediately, unless a petition for stay of effectiveness is filed and granted according to IC 13-15-6-3, and may be revoked or modified in accordance with the provisions of IC 13-15-7-1.

If you wish to challenge this decision, IC 4-21.5-3 and IC 13-15-6-1 require that you file a petition for administrative review. This petition may include a request for stay of effectiveness and must be submitted to the Office of Environmental Adjudication, 100 North Senate Avenue, Government Center North, Room 1049, Indianapolis, IN 46204, **within eighteen (18) calendar days of the mailing of this notice**. The filing of a petition for administrative review is complete on the earliest of the following dates that apply to the filing:

- (1) the date the document is delivered to the Office of Environmental Adjudication (OEA);
- (2) the date of the postmark on the envelope containing the document, if the document is mailed to OEA by U.S. mail; or
- (3) The date on which the document is deposited with a private carrier, as shown by receipt issued by the carrier, if the document is sent to the OEA by private carrier.

The petition must include facts demonstrating that you are either the applicant, a person aggrieved or adversely affected by the decision or otherwise entitled to review by law. Please identify the permit, decision, or other order for which you seek review by permit number, name of the applicant, location, date of this notice and all of the following:

- (1) the name and address of the person making the request;
- (2) the interest of the person making the request;
- (3) identification of any persons represented by the person making the request;
- (4) the reasons, with particularity, for the request;
- (5) the issues, with particularity, proposed for considerations at any hearing; and
- (6) identification of the terms and conditions which, in the judgment of the person making the request, would be appropriate in the case in question to satisfy the requirements of the law governing documents of the type issued by the Commissioner.

If you have technical questions regarding the enclosed documents, please contact the Office of Air Quality, Permits Branch at (317) 233-0178. Callers from within Indiana may call toll-free at 1-800-451-6027, ext. 3-0178.

Enclosures
FNPER.dot 9/16/03



INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

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Frank O'Bannon
Governor

Lori F. Kaplan
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November 10, 2003

Mr. Jim Davis
Jay County Landfill, Inc.
P.O. Box 1264
Portland, Indiana 47371

Re: 075-17304-00029
Second Significant Source Modification to:
Part 70 permit No.: T075-12836-00029

Dear Mr. Davis:

Jay County Landfill, Inc. was issued Part 70 operating permit T075-12836-00029 on March 26, 2002 for a municipal solid waste landfill. An application to modify the source was received on April 16, 2003. Pursuant to 326 IAC 2-7-10.5, the following emission units are approved for construction at the source:

- (a) One (1) municipal solid waste landfill, identified as LF1, constructed in 1970 and modified in 2003, with a maximum capacity of 13,092,500 tons of solid waste, and controlled by an existing utility flare, identified as FL1, which has a maximum flow rate of 1,500 standard cubic feet per minute (scfm), and exhausting through stack FLS1.
- (b) One (1) open flare, identified as FL1-R and constructed after 2003, with a maximum heat input capacity of 88.4 MMBtu per hour and a maximum flow rate of 3,000 scfm of landfill gas, and exhausting through stack FLS1-R.
- (c) Unpaved roads with public access.
- * (d) One (1) leachate storage tank, constructed in 2003, with a maximum capacity of 10,000 gallons.

* Note: This emission unit is considered an insignificant activity as defined in 326 IAC 2-7-1(21).

The following construction conditions are applicable to the proposed project:

- General Construction Conditions
 - 1. The data and information supplied with the application shall be considered part of this source modification approval. Prior to any proposed change in construction which may affect the potential to emit (PTE) of the proposed project, the change must be approved by the Office of Air Quality (OAQ).
 - 2. This approval to construct does not relieve the permittee of the responsibility to comply with the provisions of the Indiana Environmental Management Law (IC 13-11 through 13-20; 13-22 through 13-25; and 13-30), the Air Pollution Control Law (IC 13-17) and the rules promulgated thereunder, as well as other applicable local, state, and federal requirements.
 - 3. Effective Date of the Permit
Pursuant to IC 13-15-5-3, this approval becomes effective upon its issuance.

4. Pursuant to 326 IAC 2-1.1-9 and 326 IAC 2-7-10.5(i), the Commissioner may revoke this approval if construction is not commenced within eighteen (18) months after receipt of this approval or if construction is suspended for a continuous period of one (1) year or more.
5. All requirements and conditions of this construction approval shall remain in effect unless modified in a manner consistent with procedures established pursuant to 326 IAC 2.
6. Pursuant to 326 IAC 2-7-10.5(l) the emission units constructed under this approval shall not be placed into operation prior to revision of the source's Part 70 Operating Permit to incorporate the required operation conditions.

This significant source modification authorizes construction of the new emission units. Operating conditions shall be incorporated into the Part 70 operating permit as a significant permit modification in accordance with 326 IAC 2-7-10.5(l)(2) and 326 IAC 2-7-12. Operation is not approved until the significant permit modification has been issued.

Pursuant to Contract No. A305-0-00-36, IDEM, OAQ has assigned the processing of this application to Eastern Research Group, Inc., (ERG). Therefore, questions should be directed to Yu-Lien Chu, ERG, 1600 Perimeter Park Drive, Morrisville, North Carolina 27560, or call (919) 468-7871 to speak directly to Ms. Chu. Questions may also be directed to Duane Van Laningham at IDEM, OAQ, 100 North Senate Avenue, P.O. Box 6015, Indianapolis, Indiana, 46206-6015, or call (800) 451-6027 and ask for Duane Van Laningham, or extension 3-6878, or dial (317) 233-6878.

Sincerely,

Original Signed by Pau Dubenetzky
Paul Dubenetzky, Chief
Permits Branch
Office of Air Quality

Attachments

ERG/YC

cc: File - Jay County
Jay County Health Department
Air Compliance Section Inspector - Ryan Hillman
Compliance Data Section - Karen Nowak
Administrative and Development - Sara Cloe
Technical Support and Modeling - Michele Boner



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PART 70 OPERATING PERMIT OFFICE OF AIR QUALITY

**Jay County Landfill, Inc.
5825 W. South
Portland, Indiana 47371**

(herein known as the Permittee) is hereby authorized to operate subject to the conditions contained herein, the source described in Section A (Source Summary) of this permit.

This permit is issued in accordance with 326 IAC 2 and 40 CFR Part 70 Appendix A and contains the conditions and provisions specified in 326 IAC 2-7 as required by 42 U.S.C. 7401, et. seq. (Clean Air Act as amended by the 1990 Clean Air Act Amendments), 40 CFR Part 70.6, IC 13-15 and IC 13-17.

Operation Permit No.: T075-12836-00029	
Issued by: Janet G. McCabe, Assistant Commissioner Office of Air Quality	Issuance Date: March 26, 2002 Expiration Date: March 26, 2007

First Significant Permit Modification No.: 075-16132-00029, issued February 14, 2003

Second Significant Source Modification No.: 075-17304-00029	Pages Affected: 1, 3, 4, 6, 8, 10, 11, 13, 14, 15, 17 through 19
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Issued by: Original Signed by Paul Dubenetzky
Paul Dubenetzky, Branch Chief
Office of Air Quality

Issuance Date: November 10, 2003

SECTION A SOURCE SUMMARY

This permit is based on information requested by the Indiana Department of Environmental Management (IDEM), Office of Air Quality (OAQ). The information describing the source contained in conditions A.1 through A.3 is descriptive information and does not constitute enforceable conditions. However, the Permittee should be aware that a physical change or a change in the method of operation that may render this descriptive information obsolete or inaccurate may trigger requirements for the Permittee to obtain additional permits or seek modification of this permit pursuant to 326 IAC 2, or change other applicable requirements presented in the permit application.

A.1 General Information [326 IAC 2-7-4(c)] [326 IAC 2-7-5(15)] [326 IAC 2-7-1(22)]

The Permittee owns and operates a municipal solid waste landfill.

Responsible Official:	Vice President of Operations
Source Address:	5825 W. South, Portland, Indiana 47371
Mailing Address:	P.O. Box 1264, Portland, Indiana 47371
SIC Code:	4953
County Location:	Jay
Source Location Status:	Attainment for all criteria pollutants
Source Status:	Part 70 Permit Program Minor Source, under PSD Rules; Minor Source, Section 112 of the Clean Air Act Not 1 of 28 Source Categories

A.2 Emission Units and Pollution Control Equipment Summary [326 IAC 2-7-4(c)(3)] [326 IAC 2-7-5(15)]

This stationary source consists of the following emission units and pollution control devices:

- (a) One (1) municipal solid waste landfill, identified as LF1, constructed in 1970 and modified in 2003, with a maximum capacity of 13,512,776 cubic meters (approximately 13,092,500 tons of solid waste), and controlled by a utility flare, identified as FL1, with a maximum flow rate of 1500 cubic feet per minute (scfm), and exhausting through stack FLS1.
- (b) Four (4) 1,148 horsepower (8.9 MMBtu/hr) engines, identified as EG1, EG2, EG3, and EG4, using landfill gas as a fuel, each with a maximum landfill gas feeding rate of 325 scfm, and exhausting through stacks ES1, ES2, ES3, and ES4, respectively. Each engine is equipped with a crankcase for engine oil, which consumes a maximum of 240 gallons of engine oils per year and exhausts through a crankcase breather vent.
- (c) One (1) open flare, identified as FL1-R and constructed after 2003, with a maximum heat input capacity of 88.4 MMBtu per hour and a maximum flow rate of 3,000 scfm of landfill gas, and exhausting through stack FLS1-R. Existing Flare FL1 will be removed upon installation of flare FL1-R.
- (d) Unpaved roads with public access.

A.3 Specifically Regulated Insignificant Activities [326 IAC 2-7-1(21)] [326 IAC 2-7-4(c)] [326 IAC 2-7-5(15)]

This stationary source also includes the following insignificant activities which are specifically regulated, as defined in 326 IAC 2-7-1 (21):

- (a) The following equipment related to manufacturing activities not resulting in the emission of HAPs: brazing equipment, cutting torches, soldering equipment, welding equipment.
- (b) Degreasing operations that do not exceed 145 gallons per 12 months, except if subject to 326 IAC 20-6:

One (1) parts washing station, with a maximum capacity of 20 gallons.

A.4 Part 70 Permit Applicability [326 IAC 2-7-2]

This stationary source is required to have a Part 70 permit by 326 IAC 2-7-2 (Applicability) because:

- (a) It is a major source, as defined in 326 IAC 2-7-1(22);
- (b) It is a source in a source category designated by the United States Environmental Protection Agency (U.S. EPA) under 40 CFR 70.3 (Part 70 - Applicability).

SECTION D.1 FACILITY OPERATION CONDITIONS

Facility Description [326 IAC 2-7-5(15)]:

- (a) One (1) municipal solid waste landfill, identified as LF1, constructed in 1970 and modified in 2003, with a maximum capacity of 13,512,776 cubic meters (approximately 13,092,500 tons of solid waste), and controlled by a utility flare, identified as FL1, with a maximum flow rate of 1500 cubic feet per minute (scfm), and exhausting through stack FLS1.
- (b) Four (4) 1,148 horsepower (8.9 MMBtu/hr) engines, identified as EG1, EG2, EG3, and EG4, using landfill gas as a fuel, each with a maximum landfill gas feeding rate of 325 scfm, and exhausting through stacks ES1, ES2, ES3, and ES4, respectively. Each engine is equipped with a crankcase for engine oil, which consumes a maximum of 240 gallons of engine oils per year and exhausts through a crankcase breather vent.
- (c) One (1) open flare, identified as FL1-R and constructed after 2003, with a maximum heat input capacity of 88.4 MMBtu per hour and a maximum flow rate of 3,000 scfm of landfill gas, and exhausting through stack FLS1-R. Existing Flare FL1 will be removed upon installation of flare FL1-R.
- (d) Unpaved roads with public access.

(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)

Emissions Standards and Limitations

D.1.1 General Provisions Relating to NSPS and NESHAP [326 IAC 12-1-1] [40 CFR Part 60, Subpart A] [326 IAC 14-1-1] [40 CFR 61, Subpart M] [326 IAC 20-1-1] [40 CFR 63, Subpart A]

- (a) The provisions of 40 CFR Part 60, Subpart A - General Provisions, which are incorporated by reference in 326 IAC 12-1-1, apply to the facility described in this section except when otherwise specified in 40 CFR Part 60, Subpart WWW.
- (b) The provisions of 40 CFR Part 61, Subpart A - General Provisions, which are incorporated as 326 IAC 14-1-1, apply to the facility described in this section except when otherwise specified in 40 CFR Part 61, Subpart M.
- (c) The provisions of 40 CFR Part 63, Subpart A - General Provisions, which are incorporated by reference in 326 IAC 20-1-1, apply to the facility described in this section except when otherwise specified in 40 CFR Part 63, Subpart AAAA.

D.1.2 Municipal Solid Waste Landfill NSPS [326 IAC 12] [40 CFR 60.752, Subpart WWW]

The municipal solid waste landfill has a design capacity greater than 2.5 million megagrams (Mg) and shall comply with 40 CFR 60.752 (b)(2).

D.1.3 Municipal Solid Waste Landfill NESHAP [40 CFR 63, Subpart AAAA]

The municipal solid waste landfill has a design capacity greater than 2.5 million megagrams (Mg) and has estimated uncontrolled NMOC emissions greater than 50 Mg/yr. Therefore, this landfill shall comply with 40 CFR 63, Subpart AAAA.

D.1.4 Standards for air emissions from municipal solid waste landfills [40 CFR 60.752]

Pursuant to 40 CFR 60.752(b)(2), If the calculated NMOC emission rate is equal to or greater than 50 megagrams per year, the owner or operator shall:

- (a) Submit a collection and control system design plan prepared by a professional engineer to the Administrator within 1 year:
 - (1) The collection and control system as described in the plan shall meet the design requirements of 40 CFR 60.752(b)(2)(ii).
 - (2) The collection and control system design plan shall include any alternatives to the operational standards, test methods, procedures, compliance measures, monitoring, recordkeeping or reporting provisions of 40 CFR 60.753 through 60.758 proposed by the owner or operator.
 - (3) The collection and control system design plan shall either conform with specifications for active collection systems in 40 CFR 60.759 or include a demonstration to the Administrator's satisfaction of the sufficiency of the alternative provisions to 40 CFR 60.759.
 - (4) The Administrator shall review the information submitted under 40 CFR 60.752(b)(2)(i) (A), (B) and (C) and either approve it, disapprove it, or request that additional information be submitted. Because of the many site-specific factors involved with landfill gas system design, alternative systems may be necessary. A wide variety of system designs are possible, such as vertical wells, combination horizontal and vertical collection systems, or horizontal trenches only, leachate collection components, and passive systems.
- (b) Install a collection and control system that captures the gas generated within the landfill as required by 40 CFR 60.752(b)(2)(ii)(A) or (B) and (b)(2)(iii) within 30 months after the first annual report in which the emission rate equals or exceeds 50 megagrams per year, unless Tier 2 or Tier 3 sampling demonstrates that the emission rate is less than 50 megagrams per year, as specified 40 CFR 60.757(c)(1) or (2).

Pursuant to 40 CFR 60.752(b)(2)(iii), the Permittee shall route all the collected gas to a control system that complies with either of the following:

- (1) An open flare designed and operated in accordance with 40 CFR 60.18;
- (2) A control system designed and operated to reduce NMOC by 98 weight-percent, or, when an enclosed combustion device is used for control, to either reduce NMOC by 98 weight percent or reduce the outlet NMOC concentration to less than 20 parts per million by volume, dry basis as hexane at 3 percent oxygen. The reduction efficiency or parts per million by volume shall be established by an initial performance test to be completed no later than 180 days after the initial startup of the approved control system using the test methods specified in 40 CFR 60.754(d).
- (3) A treatment system that processes the collected gas for subsequent sale or use. All emissions from any atmospheric vent from the gas treatment system shall be subject to the requirements of 40 CFR 60.752(b)(2)(iii) (A) or (B).

D.1.5 Operational Standards for Collection and Control Systems [40 CFR 60.753]

Pursuant to 40 CFR 60.753, each owner or operator of an MSW landfill with a gas collection and control system used to comply with 40 CFR 60.752 (b)(2)(ii) shall:

- (a) Operate the collection system such that gas is collected from each area, cell, or group of cells in the municipal solid waste landfill in which solid waste has been in place for five years if active or 2 years or more if closed or at final grade.

- (b) Operate the collection system with negative pressure at each wellhead except under the following conditions:
 - (1) Fire or increased well temperature. The Permittee shall record instances when positive pressure occurs in efforts to avoid a fire. These records shall be submitted with the annual reports as provided in 40 CFR 60.757(f)(1).
 - (2) Use of a geomembrane or synthetic cover. The Permittee shall develop acceptable pressure limits in the design plan.
 - (3) A decommissioned well. A well may experience a static positive pressure after shut down to accommodate for declining flows. All design changes shall be approved by the Office of Air Quality (OAQ).
- (c) Operate each interior wellhead in the collection system with a landfill gas temperature less than 55EC and with either a nitrogen level less than 20 percent or an oxygen level less than 5 percent. The Permittee may establish a higher operating temperature, nitrogen, or oxygen value at a particular well. A higher operating value demonstration shall show supporting data that the elevated parameter does not cause fires or significantly inhibit anaerobic decomposition by killing methanogens.
 - (1) The nitrogen level shall be determined using Method 3C, unless an alternative method is established as allowed by 40 CFR 60.752 (b)(2)(i).
 - (2) Unless an alternative test method is established as allowed by 40 CFR 60.752 (b)(2)(i), the oxygen shall be determined by an oxygen meter using Method 3A except that; the span shall be set so that the regulatory limit is between 20 and 50 percent of the span; a data recorder is not required; only two calibration gases are required, a zero and span, and ambient air may be used as the span; a calibration error check is not required; the allowable sample bias, zero drift, and calibration drift are 10 percent.
- (d) Operate the collection system so that the methane concentration is less than 500 parts per million above background at the surface of the landfill. To determine if this level is exceeded, the Permittee shall conduct surface testing around the perimeter of the collection area and along a pattern that traverses the landfill at 30 meter intervals and where visual observations indicate elevated concentrations of landfill gas, such as distressed vegetation and cracks or seeps in the cover. The Permittee may establish an alternative traversing pattern that ensures equivalent coverage. A surface monitoring design plan shall be developed that includes a topographical map with the monitoring route and the rationale for any site-specific deviations from the 30 meter intervals. Areas with steep slopes or other dangerous areas may be excluded from the surface testing.
- (e) Operate the system such that all collected gases are vented to a control system designed and operated in compliance with 40 CFR 60.752(b)(2)(iii). In the event the collection or control system is inoperable, the gas mover system shall be shut down and all valves in the collection and control system contributing to venting of the gas to the atmosphere shall be closed within one hour.
- (f) Operate the control system at all times when the collected gas is routed to the system.
- (g) If monitoring demonstrates that the operational requirements in 40 CFR 60.753(b), (c), or (d) are not met, corrective action shall be taken as specified in 40 CFR 60.755(a)(3) through (5) or 40 CFR 60.755(c). If corrective actions are taken as specified in 40 CFR

60.755, the monitored exceedance is not a violation of the operational requirements in 40 CFR 60.753.

D.1.6 National Emission Standards for Hazardous Air Pollutants for Active Asbestos Waste Disposal Sites [40 CFR 61.154, Subpart M]

This source is subject to the National Emission Standards for Hazardous Air Pollutants 326 IAC 14-2-1, [40 CFR 61.154, Subpart M] because the landfill accepts asbestos-containing waste material. This rule requires that any active waste disposal site that receives asbestos-containing waste material must either:

- (a) Allow no visible emissions to the outside air from any active waste disposal site where asbestos-containing waste material has been deposited, or comply with (b) or (c) below.
- (b) At the end of each operating day or at least once every 24-hour period, asbestos-containing waste material that has been deposited during the previous 24-hour period must:
 - (1) Be covered with at least 15 centimeters (6 inches) of compacted nonasbestos containing material, or
 - (2) Be covered with a resinous or petroleum-based dust suppression agent that effectively binds dust and controls wind erosion. Such an agent shall be used in the manner and frequency recommended for the particular dust by the dust suppression agent manufacturer to achieve and maintain dust control. Other equally effective dust suppression agents may be used upon prior approval by the Administrator. Any used, spent, or other waste oil is not considered a dust suppression agent.
- (c) Use an alternate emissions control method that has received prior written approval by the Administrator according to the procedures described in 61.149(c)(2).
- (d) Unless the Permittee is in compliance with 40 CFR 61.154(c)(1) (Condition D.1.6(b)(1)) or a natural barrier deters access by the general public, warning signs and fencing must be installed or the requirements of paragraph (b)(1) above must be met. Warning signs must be displayed at all entrances and at intervals of 100 m (330 ft) or less along the property line of the site or along the perimeter of the sections of the site where asbestos-containing waste material is deposited. The warning signs must:
 - (1) Be posted in such a manner and location that a person can easily read the legend; and
 - (2) Conform to the requirements of 51 cm x 36 cm upright format signs specified in 29 CFR 1910.145(d)(4) and this paragraph; and
 - (3) Display the information contained in the legend provided in 61.154(b)(1)(iii).
- (e) For all asbestos containing waste material received, the owner or operator of the active waste disposal site shall:
 - (1) Maintain waste shipment records and include the following information
 - (A) The name, address, and telephone number of the waste generator;
 - (B) The name, address, and telephone number of the transporter(s);

- (C) The quantity of the asbestos containing waste material in cubic meters (cubic yards).
 - (D) The presence of improperly enclosed or uncovered waste, or any asbestos-containing waste material not sealed in leak-tight containers. Report in writing to the local, State, or EPA Regional office responsible for administering the asbestos NESHAP program for the waste generator (identified in the waste shipment record), and if different, the local, State, or EPA Regional office responsible for administering the asbestos NESHAP program for the disposal site, by the following working day, the presence of a significant amount of improperly enclosed or uncovered waste. Submit a copy of the waste shipment record along with the report.
 - (E) The date of the receipt.
- (2) As soon as possible and no longer than 30 days after receipt of the waste, send a copy of the signed waste shipment record to the waste generator.
 - (3) Upon discovering a discrepancy between the quantity of waste designated on the waste shipment records and the quantity actually received, attempt to reconcile the discrepancy with the waste generator. If the discrepancy is not resolved within 15 days after receiving the waste, immediately report in writing to the local, State, or EPA Regional office responsible for administering the asbestos NESHAP program for the waste generator (identified in the waste shipment record), and if different, the local, State, or EPA Regional office responsible for administering the asbestos NESHAP program for the disposal site. Describe the discrepancy and attempts to reconcile it, and submit a copy of the waste shipment record along with the report.
 - (4) Retain a copy of all records and reports required by this paragraph for at least 2 years.
- (f) Maintain until closure, records of the location, depth and area, and quantity in cubic meters (cubic yards) of asbestos-containing waste material within the disposal site on a map or diagram of the disposal area.
 - (g) Upon closure, comply with all the provisions of 40 CFR 61.151.
 - (h) Submit to the Administrator, upon closure of the facility, a copy of records of asbestos waste disposal locations and quantities.
 - (i) Furnish upon request, and make available during normal business hours for inspection by the Administrator, all records required under this section.
 - (j) Notify the Administrator in writing at least 45 days prior to excavating or otherwise disturbing any asbestos-containing waste material that has been deposited at a waste disposal site and is covered. If the excavation will begin on a date other than the one contained in the original notice, notice of the new start date must be provided to the Administrator at least 10 working days before excavation begins and in no event shall excavation begin earlier than the date specified in the original notification. Include the following information in the notice:
 - (1) Scheduled starting and completion dates.
 - (2) Reason for disturbing the waste.

- (3) Procedures to be used to control emissions during the excavation, storage, transport, and ultimate disposal of the excavated asbestos-containing waste material. If deemed necessary, the Administrator may require changes in the emission control procedures to be used.
- (4) Location of any temporary storage site and the final disposal site.

D.1.7 Municipal Solid Waste Landfill NESHAP [326 IAC 20] [40 CFR 63, Subpart AAAA]
Pursuant to 40 CFR 63.1955, the Permittee shall:

- (a) Comply with the requirements of 40 CFR 60, Subpart WWW.
- (b) If the Permittee is required by 40 CFR 60.752(b)(2) to install a collection and control system, the Permittee shall comply with the general and continuing compliance requirements in 40 CFR 63.1960 through 40 CFR 63.1985.
- (c) For approval of collection and control systems that include any alternatives to the operational standards, test methods, procedures, compliance measures, monitoring, recordkeeping or reporting provisions, the Permittee must follow the procedures in 40 CFR 60.752(b)(2). If alternatives have already been approved under 40 CFR part 60 subpart WWW or the Federal plan, or EPA approved and effective State or tribal plan, these alternatives can be used to comply with this subpart, except that all affected sources must comply with the startup, shutdown, and malfunction (SSM) requirements in Subpart A of this part as specified in Table 1 of this subpart and all affected sources must submit compliance reports every 6 months as specified in 40 CFR 63.1980(a) and (b), including information on all deviations that occurred during the 6-month reporting period. Deviations (as defined in 40 CFR 63.1965) for continuous emission monitors or numerical continuous parameter monitors must be determined using a 3 hour monitoring block average (as defined in 40 CFR 63.1975).

D.1.8 PSD Minor Limit [326 IAC 2-2]

- (a) The Permittee shall remove the existing 1,500 scfm flare before the initial operation of the 3,000 scfm flare.
- (b) Only the landfill gas collected from landfill LF1 is permitted to be combusted in the engines and the open flares.

These limits ensure that the CO emissions from the entire source are limited to less than 250 tons/yr. Therefore, the requirements of 326 IAC 2-2 (PSD) are not applicable.

Compliance Determination Requirements

D.1.9 Testing Requirements [326 IAC 2-7-6(1),(6)] [40 CFR 60.754]

- (a) Pursuant to 40 CFR 60.754(b):

After installation of a collection and control system in compliance with 40 CFR 60.755, the Permittee shall calculate the non methane organic compound (NMOC) emission rate for purposes of determining when the system can be removed using the following equation:

$$M_{\text{NMOC}} = 1.89 \times 10^{-3} Q_{\text{LFG}} C_{\text{NMOC}}$$

where,

M_{NMOC} = mass emission rate of NMOC, megagrams per year
 Q_{LFG} = flow rate of landfill gas, cubic meters per minute

C_{NMOC} = NMOC concentration, parts per million by volume as hexane

- (1) The flow rate of landfill gas, Q_{LFG} , shall be determined by measuring the total landfill gas flow rate at the common header pipe that leads to the control device using a gas flow measuring device calibrated according to the provisions of section 4 of Method 2E of appendix A of 40 CFR 60.
- (2) The average NMOC concentration, C_{NMOC} , shall be determined by collecting and analyzing landfill gas sampled from the common header pipe before the gas moving or condensate removal equipment using the procedures in Method 25C or Method 18 of appendix A of 40 CFR 60. If using Method 18 of appendix A of 40 CFR 60, the minimum list of compounds to be tested shall be those published in the most recent Compilation of Air Pollutant Emission Factors (AP-42). The sample location on the common header pipe shall be before any condensate removal or other gas refining units. The Permittee shall divide the NMOC concentration from Method 25C of appendix A of 40 CFR 60 by six to convert from C_{NMOC} as carbon to C_{NMOC} as hexane.
- (3) The Permittee may use another method to determine landfill gas flow rate and NMOC concentration if the method has been approved by the Office of Air Quality.

(b) Pursuant to 40 CFR 60.754(d):

For the performance testing required in 40 CFR 60.752(b)(2)(iii)(B), Method 25, 25C or Method 18 of appendix A of 40 CFR 60 shall be used to determine compliance with 98 weight percent efficiency or the 20 ppmv outlet concentration level, unless another method to demonstrate compliance has been approved by the Office of Air Quality (OAQ) or the U.S. EPA as provided by 40 CFR 60.752(b)(2)(i)(B). Method 3 or 3A shall be used to determine oxygen for correcting the NMOC concentration as hexane to 3 percent. In cases where the outlet concentration is less than 50 ppm NMOC as carbon (8 ppm NMOC as hexane), Method 25A should be used in place of Method 25. If using Method 18 of appendix A, the minimum list of compounds to be tested shall be those published in the most recent Compilation of Air Pollutant Emission Factors (AP-42). The following equation shall be used to calculate efficiency:

$$\text{Control Efficiency} = (\text{NMOC}_{\text{in}} - \text{NMOC}_{\text{out}}) / (\text{NMOC}_{\text{in}})$$

where,

NMOC_{in} = mass of NMOC entering the control device

NMOC_{out} = mass of NMOC exiting control device

D.1.10 Compliance Determination [40 CFR 63.1960]

Pursuant to 40 CFR 63.1960, compliance with 40 CFR 63, Subpart AAAA is determined by the following:

- (a) The same way it is determined for 40 CFR 60, Subpart WWW, including performance testing, monitoring of the collection system, continuous parameter monitoring, and other credible evidence.
- (b) Continuous parameter monitoring data, collected under 40 CFR 60.756(b)(1), (c)(1), and (d) of subpart WWW, are used to demonstrate compliance with the operating conditions for control systems. If a deviation (as defined in 40 CFR 63.1965) occurs, the Permittee has failed to meet the control device operating conditions described in 40 CFR 60, Subpart WWW and has deviated from the requirements of this subpart.

- (c) The Permittee must develop and implement a written SSM plan according to the provisions in 40 CFR 63.6(e)(3). A copy of the SSM plan must be maintained on site. Failure to write, implement, or maintain a copy of the SSM plan is a deviation from the requirements of this subpart.

D.1.11 Monitoring [40 CFR 60.756] Except as provided in 40 CFR 60.752(b)(2)(i)(B)

Except as provided in 40 CFR 60.752(b)(2)(i)(B):

- (a) The Permittee seeking to comply with 40 CFR 60.752(b)(2)(ii)(A) for an active gas collection shall install a sampling port and a thermometer, other temperature measuring device, or an access port for temperature measurements at each wellhead and:
 - (1) Measure the gauge pressure in the gas collection header on a monthly basis as provided in 40 CFR 60.755(a)(3);
 - (2) Monitor nitrogen or oxygen concentration in the landfill gas on a monthly basis as provided in 40 FR 60.755(a)(5); and
 - (3) Monitor temperature of the landfill gas on a monthly basis as provided in 40 CFR 60.755(a)(5).
- (b) The Permittee seeking to comply with 40 FR 60.752(b)(2)(iii) using an enclosed combustor shall calibrate, maintain, and operate according to the manufacturers specifications, the following equipment, except as otherwise provided for in 40 CFR 60, Subpart WWW or approved variances contained within the Collection and Control System Design Plan required pursuant to this rule:
 - (1) A temperature monitoring device equipped with a continuous recorder and having minimum accuracy of ± 1 percent of the temperature being measured expressed in degrees Celsius of $\pm 0.5^{\circ}\text{C}$, whichever is greater. A temperature monitoring device is not required for boilers or process heaters with design heat input capacity greater than 44 megawatts.
 - (2) A device that records flow to or bypass of the control device. The Permittee shall either; install, calibrate, and maintain a gas flow rate measuring device that shall record the flow to the control device at least every fifteen (15) minutes; or secure the bypass line valve in the closed position with a car-seal or a lock-and-key type configuration. A visual inspection of the seal or closure mechanism shall be performed at least once every month to ensure that the valve is maintained in the closed position and that the gas flow is not diverted through the bypass line.
- (c) The Permittee seeking to comply with 40 CFR 60.752(b)(2)(iii) using an open flare shall install, calibrate, maintain, and operate according to the manufacturers specifications the following equipment (except as otherwise provided for in 40 CFR 60, Subpart WWW or approved variances contained within the Collection and Control System Design Plan):
 - (1) Heat sensing device, such as an ultraviolet beam sensor or thermocouple, at the pilot light or the flame itself to indicate the continuous presence of a flame
 - (2) A device that records flow to or bypass of the flare. The Permittee shall either install, calibrate, and maintain a gas flow rate measuring device that shall record the flow to the control device at least every fifteen minutes; or secure the bypass line valve in the closed position with a carseal or a lock-and-key type configuration. A visual inspection of the seal or closure of the seal or closure mechanism shall be performed at least once every month to ensure that the

valve is maintained in the closed position and that the gas flow is not diverted through the bypass line.

- (d) The Permittee seeking to install a collection system that does not meet the specifications in 40 CFR 60.759 or seeking to monitor alternative parameters to those required by 40 CFR 60.753 through 40 CFR 60.756 shall provide information satisfactory to the Office of Air Quality (OAQ) as provided in 40 CFR 60.752(b)(2)(i)(B) and (C) describing the design and operation of the collection system, the operating parameters that would indicate proper performance, and appropriate monitoring procedures. The Office of Air Quality (OAQ) may specify additional appropriate monitoring procedures.
- (e) The Permittee seeking to demonstrate compliance with 40 CFR 60.755(c), shall monitor surface concentrations of methane according to the instrument specifications and procedures provided in 40 CFR 60.755(d). Any closed landfill that has no monitored exceedances of the operational standard in three consecutive quarterly monitoring periods may skip to annual monitoring. Any methane reading of 500 ppm or more above background detected during the annual monitoring returns the frequency for that landfill to quarterly monitoring.

D.1.12 Compliance Provisions [40 CFR 60.755]

- (a) Except as provided in 40 CFR 60.752(b)(2)(ii)(B), the specified methods below shall be used to determine whether the gas collection system is in compliance with 40 CFR 60.752(b)(2)(ii).
 - (1) For the purpose of calculating the maximum expected gas generation flow rate from the landfill to determine compliance with 60.752(b)(2)(ii)(A)(1), one of the following equations shall be used. The k and L_o kinetic factors should be those published in the most recent Compilation of Air Pollution Emission Factors (AP42) or other site-specific values demonstrated to be appropriate and approved by the Office of Air Quality (OAQ). If k has been determined as specified in 40 CFR 60.754(a)(4), the value of k determined from the test shall be used. A value of no more than 15 years shall be used for the intended use period of the gas mover equipment. The active life of the landfill is the age of the landfill plus the estimated number of years until closure.

For sites with unknown year-to-year solid waste acceptance rate:

$$Q_m = 2L_o R (e^{-kc} - e^{-kt})$$

where,

Q_m = maximum expected gas generation flow rate, cubic meters per year

L_o = methane generation potential, cubic meters per megagram solid waste

R = average annual acceptance rate, megagrams per year

k = methane generation rate constant, year⁻¹

t = age of the landfill at equipment installation plus the time the owner or operator intends to use the gas mover equipment or active life of the landfill, whichever is less. If the equipment is installed after closure, t is the age of the landfill at installation, years.

c = time since closure, years (for an active landfill $c = 0$ and $e^{-kc} = 1$)

For sites with known year-to-year solid waste acceptance rate:

$$Q_M = \sum_{i=1}^n 2 k L_O M_i (e^{-kt_i})$$

$i=1$

where,

Q_M = maximum expected gas generation flow rate, cubic meters per year

k = methane generation rate constant, year⁻¹

L_o = methane generation potential, cubic meters per megagram solid waste

M_i = mass of solid waste in the i^{th} section, megagrams

t_i = age of the i^{th} section, years

If a collection and control system has been installed, actual flow data may be used to project the maximum expected gas generation flow rate instead of, or in conjunction with, the equations in 40 CFR 60.755(a)(1)(i) and (ii). If the landfill is still accepting waste, the actual measured flow data will not equal the maximum expected gas generation rate, so calculations using the equations in 40 CFR 60.755(a)(1)(i) or (ii) or other methods shall be used to predict the maximum expected gas generation rate over the intended period of use of the gas control system equipment.

- (2) For the purposes of determining sufficient density of gas collector for compliance with 40 CFR 60.752 (b)(2)(ii)(A)(2), the Permittee shall design a system of vertical wells, horizontal collectors, or other collection devices, satisfactory to the Office of Air Quality (OAQ), capable of controlling and extracting gas from all portions of the landfill sufficient to meet all operational and performance standards.
- (3) For the purpose of demonstrating whether the gas collection system flow rate is sufficient to determine compliance with 40 CFR 60.752(b)(2)(ii)(A)(3), the Permittee shall measure gauge pressure in the gas collection header at each individual well, monthly. If a positive pressure exists, action shall be initiated to correct the exceedance within five (5) calendar days, except for the three conditions allowed under 40 CFR 60.753(b). If negative pressure cannot be achieved without excess air infiltration within fifteen (15) calendar days of the first measurement, the gas collection system shall be expanded to correct the exceedance within 120 days of the initial measurement of positive pressure. Any attempted corrective measure shall not cause exceedances of other operational or performance standards. An alternative timeline for correcting the exceedance may be submitted to the Administrator for approval.
- (4) The Permittee is not required to expand the system as required in 40 CFR 60.755(a)(3) during the first 180 days after gas collection system start-up.
- (5) For the purpose of identifying whether excess air infiltration into the landfill is occurring, the Permittee shall monitor each well monthly for temperature and nitrogen or oxygen as provided in 40 CFR 60.753(c). If a well exceeds one of these operating parameters, action shall be initiated to correct the exceedance within five (5) calendar days. If correction of the exceedance cannot be achieved within fifteen (15) calendar days of the first measurement, the gas collection system shall be expanded to correct the exceedance within 120 days of the initial exceedance. Any attempted corrective measure shall not cause exceedances of other operational or performance standards. An alternative timeline for correcting the exceedance may be submitted to the Administrator for approval.
- (6) If the Permittee seeks to demonstrate compliance with 40 CFR 60.752(b)(2)(ii)(A)(4) through the use of a collection system not conforming to

the specifications provided in 40 CFR 60.759, the Permittee shall provide information satisfactory to the Office of Air Quality (OAQ) as specified in 40 CFR 60.752 (b)(2)(i)(C) demonstrating that off-site migration is being controlled.

- (b) For purposes of compliance with 40 CFR 60.753(a), the Permittee shall place each well or design component of a controlled landfill as specified in the approved design plan as provided in 40 CFR 60.752(b)(2)(ii). Each well shall be installed no later than 60 days after the date on which the initial solid waste has been in place for a period of five (5) years or more if active or two (2) years or more if closed or at final grade.
- (c) The following procedures shall be used for compliance with the surface methane operational standard as provided in 40 CFR 60.753 (d):
 - (1) After installation of the collection system, the Permittee shall monitor surface concentrations of methane along the entire perimeter of the collection area and along a pattern that traverses the landfill at 30 meter intervals (or a site-specific established spacing) for each collection area on a quarterly basis using an organic vapor analyzer, flame ionization detector, or other portable monitor meeting the specifications provided in 40 CFR 60.755(d).
 - (2) The background concentration shall be determined by moving the probe inlet upwind and downwind outside the boundary of the landfill at a distance of at least 30 meters from perimeter wells.
 - (3) Surface emission monitoring shall be performed in accordance with section 4.3.1 of Method 21 of appendix A of 40 CFR 60, except that the probe inlet shall be placed within five(5) to ten(10) centimeters of the ground. Monitoring shall be performed during typical meteorological conditions.
 - (4) Any reading of 500 parts per million or more above background at any location shall be recorded as a monitored exceedance and the actions specified in 40 CFR 60.755(c)(4)(i) through (v) should be taken. As long as the specified actions are taken, the exceedance is not a violation of the operational requirements of 40 CFR 60.753(d).

The location of each monitored exceedance shall be marked and the location recorded.

Cover maintenance or adjustments to the vacuum of the adjacent wells to increase the gas collection in the vicinity of each exceedance shall be made and the location shall be re-monitored within ten (10) calendar days of detecting the exceedance.

If the re-monitoring of the location shows a second exceedance, additional corrective action shall be taken and the location shall be monitored again within ten (10) days of the second exceedance. If re-monitoring shows a third exceedance for the same location, the action specified in paragraph 40 CFR 60.755(c)(4)(v) of this section shall be taken, and no further monitoring of that location is required until the action specified in 40 CFR 60.755(c)(4)(v) has been taken.

Any location that initially showed an exceedance but has a methane concentration less than 500 ppm methane above background at the 10-day remonitoring specified in 40 CFR 60.755(c)(4)(ii) or (iii) shall be re-monitored one (1) month from the initial exceedance. If the one (1)-month re-monitoring shows a concentration less than 500 parts per million above background, no

further monitoring of that location is required until the next quarterly monitoring period. If the one (1)-month remonitoring shows an exceedance, the actions specified in 40 CFR 60.755(c)(4)(iii) or (v) shall be taken.

For any location where monitored methane concentration equals or exceeds 500 parts per million above background three times within a quarterly period, a new well or other collection device shall be installed within 120 calendar of the initial exceedance. An alternative remedy to the exceedance, such as upgrading the blower, header pipes or control device, and a corresponding timeline for installation may be submitted to the Office of Air Quality (OAQ) for approval.

- (5) The Permittee shall implement a program to monitor for cover integrity and implement cover repairs as necessary on a monthly basis.
- (d) The Permittee seeking to comply with the provisions of 40 CFR 60.755(c) shall comply with the following instrumentation specifications and procedures for surface emission monitoring devices:
 - (1) The portable analyzer shall meet the instrument specifications provided in section 3 of Method 21 of appendix A of 40 CFR 60, except the methane shall replace all references to volatile organic compound (VOC).
 - (2) The calibration gas shall be methane, diluted to a nominal concentration of 500 parts per million in air.
 - (3) To meet the performance evaluation requirements in section 3.1.3 of Method 21 of appendix A of 40 CFR 60, the instrument evaluation procedures of section 4.4 of Method 21 of appendix A of 40 CFR 60 shall be used.
 - (4) The calibration procedures provided in section 4.2 of Method 21 of appendix A of 40 CFR 60 shall be followed immediately before commencing a surface monitoring survey.
- (e) The provisions of 40 CFR 60.755 shall apply at all times, except during periods of startup, shutdown, or malfunction, provided that the duration of start-up, shutdown, or malfunction, shall not exceed five (5) days for collection systems and shall not exceed one (1) hour for treatment or control devices, except as otherwise provided for in 40 CFR 60, Subpart WWW or approved variance contained within the Collection and Control System Design Plan.

Record Keeping and Reporting Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-19]

D.1.13 Non Methane Organic Compound (NMOC) Rate Calculation [40 CFR 60.754]

Pursuant to 40 CFR 60.754(c), when calculating emissions for PSD purposes, the Permittee shall estimate the NMOC emission rate for comparison to the PSD major source and significance levels in 40 CFR 51.166 or 40 CFR 52.21 using AP-42 or other approved measurement procedures. If a collection system, which complies with the provisions of 40 CFR 60.752(b)(2) is already installed, the Permittee shall estimate the NMOC emission rate using the procedures provided in 40 CFR 60.754(b).

D.1.14 Reporting Requirements [40 CFR 60.757]

Pursuant to 40 CFR 60.757, except as provided in 40 CFR 60.752(b)(2)(i)(B), the Permittee shall:

- (a) Submit an initial design capacity report to the Office of Air Quality (OAQ) no later than 90 days after October 8, 1997. An amended design capacity report shall be submitted to the Office of Air Quality (OAQ) providing notification of any increase in the design capacity of the landfill. The Permittees initial design capacity report was submitted on June 10, 1996.
- (b) Submit a non methane organic compound (NMOC) emission rate report to the Office of Air Quality initially and annually thereafter, except as provided for in 40 CFR 60.757(b)(1)(ii) or (b)(3).

Pursuant to 40 CFR 60.757(b)(3), the Permittee is exempted from this reporting requirement, after the installation of a collection and control system in compliance with 40 CFR 60.752 (b)(2), during such time as the system is in operation and in compliance with 40 CFR 60.753 and 60.755.

- (c) Submit a collection and control system design plan to the Office of Air Quality (OAQ) within one (1) year of the first non methane organic compound (NMOC) emission rate report, required under 40 CFR 60.757(b), in which NMOC emission rate exceeds 50 megagrams (Mg) per year; except if the Permittee elects to recalculate the NMOC emission rate after Tier 2 sampling and analysis as provided in 40 CFR 60.754(a)(3) and the resulting rate is less than 50 megagrams per year, annual periodic reporting shall be resumed, using the Tier 2 determined site-specific NMOC concentration, until the calculated emission rate is equal to or greater than 50 megagrams per year or the landfill is closed. The revised NMOC emission rate report, with the recalculated emission rate based on NMOC sampling and analysis, shall be submitted within 180 days of the first calculated exceedance of 50 megagrams per year. If the Permittee elects to recalculate the NMOC emission rate after determining a site-specific methane generation rate constant (k), as provided in Tier 3 in 40 CFR 60.754(a)(4), and the resulting NMOC emission rate is less than 50 megagrams per year, annual periodic reporting shall be resumed. The resulting site-specific methane generation rate constant (k) shall be used in the emission rate calculation until such time as the emissions rate calculation results in an exceedance. The revised NMOC emission rate report based on the provisions of 40 CFR 60.754(a)(4) and the resulting site-specific methane generation rate constant (k) shall be submitted to the Office of Air Quality (OAQ) within one (1) year of the first calculated emission rate exceeding 50 megagrams per year.
- (d) Submit a closure report to the Office of Air Quality (OAQ) within thirty days of waste acceptance cessation. The Office of Air Quality (OAQ) may request additional information as may be necessary to verify that permanent closure has taken place in accordance with the requirements of 40 CFR 258.60. If a closure report has been submitted to the Office of Air Quality (OAQ), no additional wastes may be placed into the landfill without filing a notification of modification as described under 40 CFR 60.7(a)(4).
- (e) Submit an equipment removal report to the Office of Air Quality (OAQ) thirty (30) days prior to removal or cessation of operation of the control equipment. The equipment removal report shall contain all of the following items: a copy of the closure report submitted in accordance with 40 CFR 60.757(d), a copy of the initial performance test report demonstrating that the fifteen (15) year minimum control period has expired, and dated copies of three (3) successive NMOC emission rate reports demonstrating that the landfill is no longer producing 50 megagrams or greater of NMOC per year. The Office of Air Quality (OAQ) may request such additional information as may be necessary to verify that all of the conditions for removal in 40 CFR 60.752(b)(2)(v) have been met.
- (f) Annual reports of the following recorded information. The initial annual report shall be submitted within 180 days of installation and start-up of the collection and control

system, and shall include the initial performance test report required under 40 CFR 60.8. For enclosed combustion devices and flares, reportable exceedances are defined under 40 CFR 60.758(c), except as otherwise provided for an approved collection and control system design plan.

- (1) Value and length of time for exceedance of applicable parameters monitored under 40 CFR 60.756(a), (b), (c), and (d).
 - (2) Description and duration of all periods when the gas stream is diverted from the control device through a bypass line or the indication of bypass flow as specified under 40 CFR 60.756.
 - (3) Description and duration of all periods when the control device was not operating for a period exceeding one (1) hour and length of time the control device was not operating.
 - (4) All periods when the collection system was not operating in excess of five (5) days.
 - (5) Location of each exceedance of the 500 parts per million methane concentration as provided in 40 CFR 60.753(d) and the concentration recorded at each location for which an exceedance was recorded in the previous month.
 - (6) Date of installation and the location of each well or collection system expansion added pursuant to 40 CFR 60.755(a)(3), (b), and (c)(4).
- (g) The Permittee seeking to comply with 40 CFR 40.752(b)(2)(iii) shall include the following information with the initial performance test report required under 40 CFR 60.8:
- (1) A diagram of the collection system showing collection system positioning including all wells, horizontal collectors, surface collectors, or other gas extraction devices, including the locations of any areas excluded from collection and the proposed sites for the future collection system expansion.
 - (2) The data upon which the sufficient density of wells, horizontal collectors, surface collectors, or other gas extraction devices and the gas mover equipment sizing are based.
 - (3) The documentation of the presence of asbestos or nondegradable material for each area from which collection wells have been excluded based on the presence of asbestos or nondegradable material.
 - (4) The sum of the gas generation flow rates for all areas from which collection wells have been excluded based on nonproductivity and the calculations of gas generation flow rate for each excluded area.
 - (5) The provisions for increasing gas mover equipment capacity with increased gas generation flow rate, if the present gas mover equipment is inadequate to move the maximum flow rate expected over the life of the landfill
 - (6) The provision for the control of off-site migration.
- (h) A summary of the above information shall be submitted to the address listed in Section C - General Reporting Requirements, of this permit.

D.1.15 Record Keeping Requirements [326 IAC 12] [40 CFR 60.758]

- (a) Except as provided in 40 CFR 60.752(b)(2)(i)(B), the Permittee subject to 40 CFR 60.752(b) shall keep for at least 5 years up-to-date, readily accessible, on-site records of the design capacity report which triggered 40 CFR 60.752(b), the current amount of solid waste in-place, and the year-by-year waste acceptance rate. Off-site records may be maintained if they are retrievable within four (4) hours. Either paper copy or electronic formats are acceptable.
- (b) Except as provided in 40 CFR 60.752(b)(2)(i)(B), or approved variances contained within the collection and control system design plan, the Permittee of a controlled landfill shall keep up-to-date, readily accessible records for the life of the control equipment listed in (1) through (3) below as measured during the initial performance test or compliance determination. Records of subsequent tests or monitoring shall be maintained for a minimum of five (5) years. Records of control device vendor specifications shall be maintained until removal.
 - (1) Where the Permittee subject to the provisions of 40 CFR 60.758 seeks to demonstrate compliance with 40 CFR 60.752(b)(2)(ii):

The maximum expected gas generation flow rate as calculated in 40 CFR 60.755(a)(1). The Permittee may use another method to determine the maximum gas generation flow rate, if the method has been approved by the Office of Air Quality (OAQ).

The density of wells, horizontal collectors, surface collectors, or other gas extraction devices determined using the procedures specified in 40 CFR 60.759(a)(1).
 - (2) Where the Permittee subject to the provisions of 40 CFR 60.758 seeks to demonstrate compliance with 40 CFR 60.752(b)(2)(iii) through use of an enclosed combustion device other than a boiler or process heater with a design heat input capacity greater than 44 megawatts:

The average combustion temperature measured at least every fifteen (15) minutes and averaged over the same time period of the performance test.

The percent reduction of NMOC determined as specified in 40 CFR 60.752(b)(2)(iii)(B) achieved by the control device.
 - (3) Where the Permittee subject to the provisions of 40 CFR 60.758 seeks to demonstrate compliance with 40 CFR 60.752(b)(2)(iii)(A) through use of an open flare, the flare type (i.e., steam-assisted, air -assisted, or nonassisted), all visible emission readings, heat content determination, flow rate or bypass flow rate measurements, and exit velocity determinations made during the performance test as specified in 40 CFR 60.18; continuous records of the flare pilot flame or flare flame monitoring and records of all periods of operations during which the pilot flame of the flare flame is absent.
- (c) Except as provided in 40 CFR 60.752(b)(2)(i)(B), or approved variances contained within the Collection and Control System Design Plan required pursuant to this rule, the Permittee of a controlled landfill subject to the provisions of this subpart shall keep for 5 years up-to-date, readily accessible continuous records of the equipment operating parameters specified to be monitored in 40 CFR 60.756 as well as up-to-date, readily accessible records for periods of operation during which the parameter boundaries established during the most recent performance test are exceeded.

- (1) The following constitute exceedances that shall be recorded and reported under 40 CFR 60.757(f):

For enclosed combustors except for boilers and process heaters with design heat input capacity of 44 megawatts (150 million British thermal unit per hour) or greater, all 3-hour periods of operation during which the average combustion temperature was more than 28 degrees C below the average combustion temperature during the most recent performance test at which compliance with 40 CFR 60.752(b)(2)(iii) was determined.

For boilers or process heaters, whenever there is a change in the location at which the vent stream is introduced into the flame zone as required under 40 CFR 60.758(b)(3) of this section.
- (2) The Permittee subject to 40 CFR 60.758 shall keep up-to-date, readily accessible continuous records of the indication of flow to the control device or the indication of bypass flow or records of monthly inspections of car-seals or lock-and-key configurations used to seal bypass lines, specified under 40 CFR 60.756.
- (3) The Permittee seeking to comply with the provisions of 40 CFR 60.758 by use of an open flare shall keep up-to-date, readily accessible continuous records of the flame or flare pilot flame monitoring specified under 40 CFR 60.756(c), and up-to-date, readily accessible records of all periods of operation in which the flame or flare pilot flame is absent.
- (d) Except as provided in 40 CFR 60.752(b)(2)(i)(B), the Permittee subject to the provisions of this subpart shall keep for the life of the collection system an up-to-date, readily accessible plot map showing each existing and planned collector in the system and providing a unique identification location label for each collector.
 - (1) The Permittee subject to the provisions of 40 CFR 60.758 shall keep up-to-date, readily accessible records of the installation date and location of all newly installed collectors as specified in 40 CFR 60.755 (b).
 - (2) The Permittee subject to the provisions of 40 CFR 60.758 shall keep readily accessible documentation of the nature, date of deposition, amount, and location of asbestos-containing or nondegradable waste excluded from collection as provided in 40 CFR 60.759 (a)(3)(i) as well as any non-productive areas excluded from collection as provided in 40 CFR 60.759 (a)(3)(ii).
- (e) Except as provided in 40 CFR 60.752(b)(2)(i)(B), the Permittee subject to the provisions of this subpart shall keep for at least 5 years up-to-date, readily accessible records of all collection and control system exceedances of the operational standards in 40 CFR 60.753, the reading in the subsequent month whether or not the second reading is an exceedance, and the location of each exceedance.

D.1.16 Record Keeping and Reporting Requirements for NESHAP for Municipal Solid Waste Landfills [40 CFR 63.1980]

Pursuant to 40 CFR 63.1980, the Permittee shall:

- (a) Keep records and reports as specified in 40 CFR 60, Subpart WWW, or in the Federal plan, EPA approved State plan or tribal plan that implements 40 CFR 60, Subpart Cc, whichever applies to this landfill, with one exception: The Permittee must submit the annual report described in 40 CFR 60.757(f) and Condition D.1.13(f) every 6 months.

- (b) Keep records and reports as specified in the general provisions of 40 CFR 60 and 40 CFR 63 as shown in Table 1 of 40 CFR 63, Subpart AAAA. Applicable records in the general provisions include items such as SSM plans and the SSM plan reports. The SSM Plan report is due semi-annually.

Indiana Department of Environmental Management Office of Air Quality

Addendum to the Technical Support Document (TSD) for a Part 70 Significant Source Modification and a Part 70 Significant Permit Modification

Source Background and Description

Source Name:	Jay County Landfill, Inc.
Source Location:	5825 W. South, Portland, Indiana 47371
County:	Jay
SIC Code:	4953
Operation Permit No.:	T075-12836-00029
Operation Permit Issuance Date:	March 26, 2002
Significant Source Modification No.:	075-17304-00029
Significant Permit Modification No.:	075-17783-00029
Permit Reviewer:	ERG/YC

On September 5, 2003, the Office of Air Quality (OAQ) had a notice published in the Commercial Review Portland, Indiana stating that Jay County Landfill, Inc., had applied for a Part 70 Significant Source Modification and a Part 70 Significant Permit Modification to construct and operate an expanded landfill site and a 3,000 scfm open flare. The notice also stated that OAQ proposed to issue a permit for this operation and provided information on how the public could review the proposed permit and other documentation. Finally, the notice informed interested parties that there was a period of thirty (30) days to provide comments on whether or not this permit should be issued as proposed.

On October 2, 2003, the source submitted comments on the proposed the Significant Source Modification and the Significant Permit Modification. The summary of the comments are as follows. Language with a line through it has been deleted and new language is in bold.

Comment 1:

The source stated that the density of the waste in the landfill might increase over time. However, the volume of the landfill will not change. Therefore, the source suggested to describe the capacity of the landfill as 13,512,776 cubic meters.

Response to Comment 1:

IDEM, OAQ understands that the density of the waste might change. However, the maximum waste weight information that was used to estimate the potential to emit VOC of this landfill must be included in the permit. Therefore, as a result of this comment, Conditions A.2(a) and D.1 have been revised as follows.

A.2 Emission Units and Pollution Control Equipment Summary [326 IAC 2-7-4(c)(3)] [326 IAC 2-7-5(15)]

This stationary source consists of the following emission units and pollution control devices:

- (a) One (1) municipal solid waste landfill, identified as LF1, constructed in 1970 and modified in 2003, with a maximum capacity of **13,512,776 cubic meters (approximately 13,092,500 tons of solid waste)**, and controlled by a utility flare, identified as FL1, with a maximum flow rate of 1500 cubic feet per minute (scfm), and exhausting through stack FLS1.

SECTION D.1 FACILITY OPERATION CONDITIONS

Facility Description [326 IAC 2-7-5(15)]:

One (1) municipal solid waste landfill, identified as LF1, constructed in 1970 and modified in 2003, with a maximum capacity of **13,512,776 cubic meters (approximately 13,092,500 tons of solid waste)**, and controlled by a utility flare, identified as FL1, with a maximum flow rate of 1500 cubic feet per minute (scfm), and exhausting through stack FLS1.

- (b) Four (4) 1,148 horsepower (8.9 MMBtu/hr) engines, identified as EG1, EG2, EG3, and EG4, using landfill gas as a fuel, each with a maximum landfill gas feeding rate of 325 scfm, and exhausting through stacks ES1, ES2, ES3, and ES4, respectively. Each engine is equipped with a crankcase for engine oil, which consumes a maximum of 240 gallons of engine oils per year and exhausts through a crankcase breather vent.
- (c) One (1) open flare, identified as FL1-R and constructed after 2003, with a maximum heat input capacity of 88.4 MMBtu per hour and a maximum flow rate of 3,000 scfm of landfill gas, and exhausting through stack FLS1-R. Existing Flare FL1 will be removed upon installation of flare FL1-R.
- (d) Unpaved roads with public access.

(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)

On September 15, 2003, US EPA Region V submitted comments on the proposed the Significant Source Modification and the Significant Permit Modification. The summary of the comments is as follows:

Comment 1:

Since the control devices have the capacity to combust more fuel than landfill gas, EPA suggested the addition of a condition which specifies that landfill gas is the only fuel permitted to be combusted in the engines and flares.

Response to Comment 1:

Condition D.1.8 has been revised as follows to specify that only landfill gas can be used in the control devices. This condition also ensures that the CO emissions from the entire source are less than 250 ton/yrs. Therefore, the requirements of 326 IAC 2-2 (PSD) are not applicable.

D.1.8 PSD Minor Limit [326 IAC 2-2]

- (a) The Permittee shall remove the existing 1,500 scfm flare before the initial operation of the 3,000 scfm flare.
- (b) **Only the landfill gas collected from landfill LF1 is permitted to be combusted in the engines and the open flares.**

These limits ensure that the CO emissions from the entire source are limited to less than 250 tons/yr. Therefore, the requirements of 326 IAC 2-2 (PSD) are not applicable.

Comment 2:

EPA stated the emission factors for the flare combustion should be based on the emissions factors in AP-42, Chapter 2.4 for MSW landfills, instead of the emission factors in AP-42, Chapter 13.5 for Industrial flares. EPA requested a recalculation of the potential emissions from the new 3,000 scfm using the emission factors in AP-42, Chapter 2.4, unless the source can provide the manufacturer's guaranteed emission factors. EPA also indicated that the NMOC concentration used to calculate the potential to emit VOC from the flare is not the default value in the EPA LandGEM.

Comment 3:

EPA stated that the model parameters, Lo and k, used in the LandGEM model, should be the default values in AP-42, unless the source has performed a Tier 3 test.

Response to Comment 2 and 3:

In the public notice draft, the PTE of CO for the proposed 3,000 scfm flare was calculated using the flare manufacturer guaranteed emission factor, the PTE of SO₂ was calculated using the sulfur compound concentration in AP-42, Table 2.4-1, and the PTE of VOC was calculated based on the site specific NMOC concentrations. Therefore, the PTE of CO, SO₂, and VOC remains unchanged. Using the PM and NO_x emission factors in AP-42, Chapter 2.4, Table 2.4-5, the PTE of PM/PM10 and NO_x has been revised as follows:

PTE of PM/PM (assuming PM10 emissions equal PM emissions) =
 3,000 scf/min x 60 min/hr x 50% Methane x 1 MMdscf/1,000,000 scf x 17 lbs/MMdscf x 8760 hrs/yr x 1 tons/2000 lbs = 6.70 tons/yr

PTE of NO_x =
 3,000 scf/min x 60 min/hr x 50% Methane x 1 MMdscf/1,000,000 scf x 40 lbs/MMdscf x 8760 hrs/yr x 1 tons/2000 lbs = 15.8 tons/yr

The source has re-run the LandGEM model with the default Lo and K value in AP-42 and the site specific NMOC concentration, which is from the Tier 2 test results. The revised modeling results were submitted on September 23, 2003 and it shows that the maximum NMOC emissions from the expanded landfill is 93.45 Mg/yr, which is expected to occur in 2026. Assuming the collection efficiency of this landfill is 75%, the fugitive NMOC emissions from the expanded landfill site is 25.7 tons/yr (93.45 Mg/yr x 1.1 tons/Mg x (1-75%) = 25.7 tons/yr).

The changes above will affect the potential to emit from the proposed expanded landfill and the 3,000 flare. Therefore, the "Potential to Emit of Modification After Issuance" table in the Technical Support Document (TSD) for both the Source Modification and the Permit Modification has been revised as shown below:

Process/facility	Potential to Emit (tons/year)						
	PM	PM-10	SO ₂	VOC	CO	NO _x	HAPs
Expanded Landfill Site (Fugitive)	-	-	-	26.8 25.7	-	-	6.25
3,000 scfm Flare	8.70 6.70	8.70 6.70	6.84	1.55	58.1	26.3 15.8	Less than 0.54

	Potential to Emit (tons/year)						
Process/facility	PM	PM-10	SO ₂	VOC	CO	NO _x	HAPs
*Removal of 1,500 scfm Flare	(0)	(0)	(0)	(1.36)	(72.5)	(13.3)	(Negligible)
Leachate Tank (Insignificant)	-	-	-	Negligible	-	-	Negligible
Unpaved Roads (Fugitive)	Less than 33.0	Less than 7.12	-	-	-	-	-
**PTE of This Modification	8.70 6.70	8.70 6.70	6.84	0.19	(14.4)	43.0 2.50	Less than 6.79
***Total PTE of the Existing Source	13.7	13.7	17.8	26.9	205	102	5.65
Total PTE of the Entire Source After This Modification	22.4 20.4	22.4 20.4	24.6	27.1	190.6	445 105	Less than 12.4
PSD Significant Thresholds	250	250	250	250	250	250	NA

Note: (*) The PTE of the existing 1,500 scfm flare is from the Technical Support Document (TSD) for T075-12836-00029, issued on March 26, 2002. The PTE in "()" means negative numbers.
 (**) Since this source is not in one of 28 source categories, the fugitive VOC and PM/PM10 emissions are not counted toward to the total PTE of this modification for PSD review purposes.
 (***) The PTE of the existing source is from the Addendum to the Technical Support Document (ATSD) for SSM #075-16124-00029, issued on January 29, 2003.

The changes in PTE will not trigger new applicable requirements or affect any permit conditions in the draft permit. Therefore, no changes have been made to the permit.

Comment 4:

EPA stated that the performance testing requirement specified in 40 CFR 60.752(b)(2)(iii) could not be found in the permit. EPA requested to revise the permit to include this requirement.

Response to Comment 4:

Condition D.1.4(b) has been revised as follows to list the specific requirements in 40 CFR 60.752(b)(2)(iii):

D.1.4 Standards for air emissions from municipal solid waste landfills [40 CFR 60.752]

- (b) Install a collection and control system that captures the gas generated within the landfill as required by 40 CFR 60.752(b)(2)(ii)(A) or (B) and (b)(2)(iii) within 30 months after the first annual report in which the emission rate equals or exceeds 50 megagrams per year, unless Tier 2 or Tier 3 sampling demonstrates that the emission rate is less than 50 megagrams per year, as specified 40 CFR 60.757(c)(1) or (2).

Pursuant to 40 CFR 60.752(b)(2)(iii), the Permittee shall route all the collected gas to a control system that complies with either of the following:

- (1) An open flare designed and operated in accordance with 40 CFR 60.18;**
- (2) A control system designed and operated to reduce NMOC by 98 weight-percent, or, when an enclosed combustion device is used for control, to either reduce NMOC by 98 weight percent or reduce the outlet NMOC concentration to less than 20 parts per million by volume, dry basis as**

hexane at 3 percent oxygen. The reduction efficiency or parts per million by volume shall be established by an initial performance test to be completed no later than 180 days after the initial startup of the approved control system using the test methods specified in 40 CFR 60.754(d).

- (3) **A treatment system that processes the collected gas for subsequent sale or use. All emissions from any atmospheric vent from the gas treatment system shall be subject to the requirements of 40 CFR 60.752(b)(2)(iii) (A) or (B).**

Comment 5:

EPA indicated that the "Test Methods and Procedures" section of 40 CFR 60.754(d) was revised on October 17, 2000. EPA suggested a revision to the permit conditions to reflect the most recent requirement.

Response to Comment 5:

The requirements of 40 CFR 60.754(d) are listed under Condition D.1.9(b) and have been revised as follows to reflect the revised 40 CFR 60.754(d):

D.1.9 Testing Requirements [326 IAC 2-7-6(1),(6)] [40 CFR 60.754] (+)

(b) Pursuant to 40 CFR 60.754(d):

For the performance testing required in 40 CFR 60.752(b)(2)(iii)(B), Method 25, 25C or Method 18 of appendix A of 40 CFR 60 shall be used to determine compliance with 98 weight percent efficiency or the 20 ppmv outlet concentration level, unless another method to demonstrate compliance has been approved by the Office of Air Quality (OAQ) or the U.S. EPA as provided by 40 CFR 60.752(b)(2)(i)(B). **Method 3 or 3A shall be used to determine oxygen for correcting the NMOC concentration as hexane to 3 percent.** In cases where the outlet concentration is less than 50 ppm NMOC as carbon (8 ppm NMOC as hexane), Method 25A should be used in place of Method 25. If using Method 18 of appendix A, the minimum list of compounds to be tested shall be those published in the most recent Compilation of Air Pollutant Emission Factors (AP-42). The following equation shall be used to calculate efficiency:

Comment 6:

EPA indicated that Condition D.1.6(d) should contain a requirement to space the signs for asbestos disposal at 100 feet apart, pursuant to 40 CFR 61.154(b)(1).

Response to Comment 6:

Condition D.1.6(d) has been revised to include the spacing requirements for the warning signs in 40 CFR 61.154(b)(1). In addition, pursuant to 40 CFR 61.154(b), the warning signs and fencing are not required when the Permittee is in compliance with the requirements in 40 CFR 61.154(c)(1), which requires covering asbestos containing waste with at least 15 cm of compacted nonasbestos containing material. Therefore, Condition D.1.6(d) has been revised as follows:

D.1.6 National Emission Standards for Hazardous Air Pollutants for Active Asbestos Waste Disposal Sites [40 CFR 61.154, Subpart M]

- (d) ~~Also, u~~ **Unless the Permittee is in compliance with 40 CFR 61.154(c)(1) (Condition D.1.6(b)(1))** or a natural barrier deters access by the general public, warning signs and fencing must be installed or the requirements of paragraph (b)(1) above must

be met. ~~The perimeter of the disposal site must be fence in a manner adequate to deter access by the general public.~~ **Warning signs must be displayed at all entrances and at intervals of 100 m (330 ft) or less along the property line of the site or along the perimeter of the sections of the site where asbestos-containing waste material is deposited.** The warning signs must:

Comment 7:

For Conditions D.1.12(a) and D.1.12(b), the referenced 40 CFR 60.752(b)(2)(i) should be 40 CFR 60.752(b)(2)(ii).

Response to Comment 7:

Conditions D.1.12(a) and D.1.12(b) have been corrected as follows:

D.1.12 Compliance Provisions [40 CFR 60.755]

(a) Except as provided in 40 CFR 60.752(b)(2)(ii)(B), the specified methods below shall be used to determine whether the gas collection system is in compliance with 40 CFR 60.752(b)(2)(ii).

.....

(b) For purposes of compliance with 40 CFR 60.753(a), the Permittee shall place each well or design component of a controlled landfill as specified in the approved design plan as provided in 40 CFR 60.752(b)(2)(ii). Each well shall be installed no later than 60 days after the date on which the initial solid waste has been in place for a period of five (5) years or more if active or two (2) years or more if closed or at final grade.

Comment 8:

EPA stated that Conditions D.1.12(a)(6) and D.1.14(b) are not easy to follow and suggested a revision to the language in these conditions.

Response to Comment 8:

Condition D.1.12(a)(6) is a copy of 40 CFR 60.755(a)(6). For clarification purposes, IDEM, OAQ has revised Condition D.1.12(a)(6) as shown below.

Also, Condition D.1.14(b) is a copy of 40 CFR 60.757(b). Since the NMOC emissions from this source are currently greater than 50 Mg/yr and the source has installed a collection and control system, this source is exempt from the annual NMOC emission reporting requirements in 40 CFR 60.755(b), pursuant to 40 CFR 60.755(b)(3). Therefore, Condition D.1.14(b) has also been revised as shown below.

D.1.12 Compliance Provisions [40 CFR 60.755]

(a)

(6) If the Permittee seeks to demonstrate compliance with 40 CFR 60.752(b)(2)(ii)(A)(4) through the use of a collection system not conforming to the specifications provided in 40 CFR 60.759, **the Permittee** shall provide information satisfactory to the Office of Air Quality (OAQ) as specified in 40 CFR 60.752 (b)(2)(i)(C) demonstrating that off-site migration is being controlled.

D.1.14 Reporting Requirements [40 CFR 60.757]

Pursuant to 40 CFR 60.757, except as provided in 40 CFR 60.752(b)(2)(i)(B), the Permittee shall:

- (b) Submit a non methane organic compound (NMOC) emission rate report to the Office of Air Quality initially and annually thereafter, except as provided for in 40 CFR 60.757(b)(1)(ii) or (b)(3). ~~The Office of Air Quality (OAQ) may request such additional information as may be necessary to verify the reported NMOC emission rate. The report should contain an annual or 5-year estimate of the non methane organic compound (NMOC) emission rate using the formula and procedures provided in 40 CFR 60.754 (a) or (b), as applicable. The initial NMOC emission rate report may be combined with the initial design capacity report required in 40 CFR 60.757(a) and shall be submitted no later than indicated in paragraphs 40 CFR 60.757(b)(1)(i)(A) and (B). June 10, 1996 for landfills that commenced construction, modification, or reconstruction on or after May 30, 1991, but before March 12, 1996, or ninety days after the date of commenced construction, modification, or reconstruction for landfills that commence construction, modification, or reconstruction on or after March 12, 1996. Subsequent NMOC emission rate reports shall be submitted annually thereafter, except as provided in 40 CFR 60.757(b)(1)(ii) and (b)(3). If the estimated NMOC emission rate as reported in the annual report to the Office of Air Quality (OAQ) is less than 50 megagrams per year in each of the next five (5) consecutive years, the Permittee may elect to submit an estimate of the NMOC emission rate for the next five (5) year period in lieu of the annual report. This estimate shall include the current amount of solid waste in place and the estimated waste acceptance rate for each year of the five (5) years for which an NMOC emission rate is estimated. All data and calculations upon which this estimate is based shall be provided to the Office of Air Quality (OAQ). This estimate shall be revised at least once every five (5) years. If the actual waste acceptance rate exceeds the estimated waste acceptance rate in any year reported in the five (5) year estimate, a revised five (5) year estimate shall be submitted to the Office of Air Quality. The revised estimate shall cover the five (5) year period beginning with the year in which the actual waste acceptance rate exceeded the estimated waste acceptance rate. The NMOC emission rate report shall include all the data, calculations, sample reports, and measurements used to estimate the annual or five (5) year emission rate.~~

Pursuant to 40 CFR 60.757(b)(3), ~~the Permittee is exempted from the this reporting requirements of 40 CFR 60.757(b)(1) and (2), after the installation of a collection and control system in compliance with 40 CFR 60.752 (b)(2), during such time as the system is in operation and in compliance with 40 CFR 60.753 and 60.755.~~

Comment 9:

For Condition D.1.15(b), the phrase "listed in (a) through (d)" should state "listed in (1) through (4)".

Response to Comment 9:

Since Condition D.1.15(b)(3) has been removed from the permit (see the response to Comment 11), condition D.1.15(b) has been revised as follows as a result of this comment:

D.1.15 Record Keeping Requirements [326 IAC 12] [40 CFR 60.758]

- (b) Except as provided in 40 CFR 60.752(b)(2)(i)(B), or approved variances contained within the collection and control system design plan, the Permittee of a controlled landfill shall keep up-to-date, readily accessible records for the life of the control equipment listed in (a1) through (d3) below as measured during the initial performance test or compliance determination. Records of subsequent tests or monitoring shall be maintained for a minimum of five (5) years. Records of control device vendor specifications shall be maintained until removal.

Comment 10:

For Condition D.1.15(c)(1), the phrase "28EC" should be "28 degree C", and the referenced 40 CFR 60.758(b)(3)(i) should be 40 CFR 60.758(b)(3).

Response to Comment 10:

Condition D.1.15(c) has been revised as follows as a result of this comment:

D.1.15 Record Keeping Requirements [326 IAC 12] [40 CFR 60.758]

- (c) Except as provided in 40 CFR 60.752(b)(2)(i)(B), or approved variances contained within the Collection and Control System Design Plan required pursuant to this rule, the Permittee of a controlled landfill subject to the provisions of this subpart shall keep for 5 years up-to-date, readily accessible continuous records of the equipment operating parameters specified to be monitored in 40 CFR 60.756 as well as up-to-date, readily accessible records for periods of operation during which the parameter boundaries established during the most recent performance test are exceeded.
- (1) The following constitute exceedances that shall be recorded and reported under 40 CFR 60.757(f):
- For enclosed combustors except for boilers and process heaters with design heat input capacity of 44 megawatts (150 million British thermal unit per hour) or greater, all 3-hour periods of operation during which the average combustion temperature was more than 28 **E degrees** C below the average combustion temperature during the most recent performance test at which compliance with 40 CFR 60.752(b)(2)(iii) was determined.
- For boilers or process heaters, whenever there is a change in the location at which the vent stream is introduced into the flame zone as required under 40 CFR 60.758(b)(3)(~~i~~) of this section.

Comment 11:

EPA stated that the conditions in the draft should be revised to include the site specific requirements only.

Response to Comment 11:

This source currently is permitted to use open flares and landfill gas recovery engines as control devices. Therefore, Conditions D.1.11(d), D.1.15(b)(3), D.1.15(c)(3) are not applicable for this source and have been removed from the permit. In addition, this existing landfill site has a maximum capacity greater than 2.5 million megagrams. Therefore, Condition D.1.15(f) is not applicable and has been removed from the permit.

D.1.11 Monitoring [40 CFR 60.756] Except as provided in 40 CFR 60.752(b)(2)(i)(B)

Except as provided in 40 CFR 60.752(b)(2)(i)(B):

.....

- (d) ~~The Permittee seeking to comply with 40 CFR 60.752(b)(2)(iii) using a device other than an open flare or an enclosed combustor shall provide information satisfactory to the Office of Air Quality (OAQ) as provided in 40 CFR 60.752(b)(2)(i)(B) describing the operation of the control device, the operating parameters that would indicate proper performance, and appropriate monitoring procedures. The Office of Air Quality (OAQ)~~

~~shall review the information and either approve it, or request that additional information be submitted. The Office of Air Quality (OAQ) may specify additional monitoring procedures.~~

D.1.15 Record Keeping Requirements [326 IAC 12] [40 CFR 60.758]

(b)

~~(3) Where the Permittee subject to the provisions of 40 CFR 60.758 seeks to demonstrate compliance with 40 CFR 60.752(b)(2)(iii)(B)(1) through use of a boiler or process heater of any size: a description of the location at which the collected gas vent stream is introduced into the boiler or process heater over the same time period of the performance testing.~~

~~(4)(3)~~

(c) Except as provided in 40 CFR 60.752(b)(2)(i)(B), or approved variances contained within the Collection and Control System Design Plan required pursuant to this rule, the Permittee of a controlled landfill subject to the provisions of this subpart shall keep for 5 years up-to-date, readily accessible continuous records of the equipment operating parameters specified to be monitored in 40 CFR 60.756 as well as up-to-date, readily accessible records for periods of operation during which the parameter boundaries established during the most recent performance test are exceeded.

~~(3) The Permittee subject to the provisions of 40 CFR 60.758 who uses a boiler or process heater with a design heat input capacity of 44 megawatts or greater to comply with 40 CFR 60.752(b)(2)(iii) shall keep an up-to-date, readily accessible record of all periods of operation of the boiler or process heater. (Examples of such records could include records of steam use, fuel use, or monitoring data collected pursuant to other State, local, Tribal or Federal regulatory requirements.)~~

~~(4)(3)~~

.

~~(f) Landfill owners or operators who convert design capacity from volume to mass or mass to volume to demonstrate that landfill design capacity is less than 2.5 million megagrams or 2.5 million cubic meters, as provided in the definition of design capacity, shall keep readily accessible, on-site records of the annual recalculation of site-specific density, design capacity, and the supporting documentation. Off-site records may be maintained if they are retrievable within 4 hours. Either paper copy or electronic formats are acceptable.~~

In addition, this source has performed Tier 1 and Tier 2 tests and determined that the NMOC emissions are greater than 50 Mg/hr. In addition, the source is currently controlled by flares. Therefore, the source is no longer required to calculate and record the NMOC emissions each year as required in 40 CFR 60.754(a) and (b). Therefore, the requirements of 40 CFR 60.754(a) and (b) [D.1.13(a) and (b)] have been removed from the permit.

D.1.13 Non Methane Organic Compound (NMOC) Rate Calculation [40 CFR 60.754]

~~Pursuant to 40 CFR 60.754 the Permittee shall:~~

~~(a) Calculate the non-methane organic compound (NMOC) emission rate using either the equation provided in 40 CFR 60.754(a)(1)(i) or the equation provided in 40 CFR~~

60.754(a)(1)(ii). Both equations may be used if the actual year-to-year solid waste acceptance rate is known, as specified in 40 CFR 60.754(a)(1)(i), for part of the life of the landfill and the actual year-to-year solid waste acceptance rate is unknown, as specified in paragraph 40 CFR 60.754(a)(1)(ii), for part of the life of the landfill. The values to be used in both equations are 0.05 per year for k , 170 cubic meters per megagram for L_o , and 4,000 parts per million by volume as hexane for the C_{NMOC} . For landfills located in geographical areas with a thirty year annual average precipitation of less than 25 inches, as measured at the nearest representative official meteorological site, the k value to be used is 0.02 per year.

The following equation shall be used if the actual year-to-year solid waste acceptance rate is known:

$$M_{NMOC} = \sum_{i=1}^n \left(2 k L_o M_i (e^{-kt} - e^{-kt_i}) (C_{NMOC} - 0.6) (3.6 \times 10^{-9}) \right)$$

where,

M_{NMOC} = Total NMOC emission rate from the landfill, megagrams per year

k = methane generation rate constant, year⁻¹

L_o = methane generation potential, cubic meters per megagram solid waste

M_i = mass of solid waste in the i^{th} section, megagrams

t_i = age of the i^{th} section, years

C_{NMOC} = concentration of NMOC, parts per million by volume as hexane

3.6×10^{-9} = conversion factor

The mass of the nondegradable solid waste may be subtracted from the total mass of solid waste in a particular section of the landfill when calculating the value for M_i if documentation of the nature and amount of such wastes is maintained.

The following equation shall be used if the actual year-to-year solid waste acceptance rate is unknown:

$$M_{NMOC} = 2 L_o R (e^{-kc} - e^{-kt}) (C_{NMOC} - 0.6) (3.6 \times 10^{-9})$$

where,

M_{NMOC} = mass emission rate of NMOC, megagrams per year

L_o = methane generation potential, cubic meters per megagram solid waste

R = average annual acceptance rate, megagrams per year

k = methane generation rate constant, year⁻¹

t = age of landfill, years

C_{NMOC} = concentration of NMOC, parts per million by volume as hexane

c = time since closure, years. For active landfill $c = 0$ and $e^{-kc} = 1$

3.6×10^{-9} = conversion factor

The mass of the nondegradable solid waste may be subtracted from the total mass of solid waste in a particular section of the landfill when calculating the value for M_i if documentation of the nature and amount of such wastes is maintained.

(b) Tier 1. The Permittee shall compare the calculated NMOC mass emission rate to the standard of 50 megagrams per year.

If the NMOC emission rate calculated in 40 CFR 60.754(a)(1) is less than 50 megagrams per year, then the landfill owner shall submit an emission rate report as provided in 40 CFR 60.757(b)(1), and shall recalculate the NMOC mass emission rate

annually as required under 40 CFR 60.752(b)(1). If the calculated NMOC emission rate is equal to or greater than 50 megagrams per year, then the Permittee shall either comply with 40 CFR 60.752(b)(2), or determine a site-specific NMOC concentration and recalculate the NMOC emission rate using the procedures provided in 40 CFR 60.754(a)(3).

~~Tier 2. The Permittee shall determine the NMOC concentration using the following sampling procedure. The Permittee shall install at least two sample probes per hectare of landfill surface that has retained waste for at least 2 years. If the landfill is larger than 25 hectares in area, only 50 samples are required. The sample probes should be located to avoid known areas of nondegradable solid waste. The Permittee shall collect and analyze one sample of landfill gas from each probe to determine the NMOC concentration using Method 25C of appendix A of 40 CFR 60 or Method 18 of appendix A of 40 CFR 60. If using Method 18 of appendix A of 40 CFR 60, the minimum list of compounds to be tested shall be those published in the most recent Compilation of Air Pollutant Emission Factors (AP-42). If composite sampling is used, equal volumes shall be taken from each sample probe. If more than the required number of samples are taken, all samples shall be used in analysis. The Permittee shall divide the NMOC concentration from Method 25C of appendix A by six to convert from C_{NMOC} -as carbon to C_{NMOC} -as hexane.~~

~~The Permittee shall recalculate the NMOC mass emission rate using the equations provided in 40 CFR 60.754(a)(1)(i) and (a)(1)(ii) and using the average NMOC concentration from the collected samples instead of the default value in the equation provided in 40 CFR 60.754(a)(1).~~

~~If the resulting mass emission rate calculated using the site-specific NMOC concentration is equal to or greater than 50 megagrams per year, then the Permittee shall either comply with 40 CFR 60.752(b)(2), or determine the site-specific methane generation rate constant and recalculate the NMOC emission rate using the site-specific methane generation rate using the procedure specified in 40 CFR 60.754(a)(4).~~

~~If the resulting NMOC mass emission rate is less than 50 megagrams per year, the Permittee shall submit a periodic estimate of the emission rate report as provided in 40 CFR 60.757(b)(1) and retest the site-specific NMOC concentration every five (5) years using the methods in 40 CFR 60.754(a)(3).~~

~~Tier 3. The site-specific methane generation rate constant shall be determined using the procedures provided in Method 2E of appendix A of 40 CFR 60. The Permittee shall estimate the NMOC mass emission rate using equations in 40 CFR 60.754(a)(1)(i) or (a)(1)(ii) and using a site-specific methane generation rate constant k , and the site specific NMOC concentration as determined in 40 CFR 60.754(a)(3) instead of the default values provided in 40 CFR 60.754(a)(1). The Permittee shall compare the resulting NMOC mass emission rate to the standard of 50 megagrams per year.~~

~~If the NMOC mass emission rate as calculated using the site-specific methane generation rate and concentration of NMOC is equal to or greater than 50 megagrams per year, the Permittee shall comply with 40 CFR 60.752(b)(2).~~

~~If the NMOC mass emission rate is less than 50 megagrams per year, then the Permittee shall submit a periodic emission rate report as provided in 40 CFR 60.757(b)(1) and shall recalculate the NMOC mass emission rate annually, as provided in 40 CFR 60.757(b)(1) using the equations in 40 CFR 60.754(a)(1) and using the site-specific methane generation rate constant and NMOC concentration obtained in 40 CFR 60.754(a)(3). The calculation of the methane generation rate constant is performed only once, and the value obtained from this test shall be used in all subsequent annual NMOC emission rate calculations.~~

~~The Permittee may use other methods to determine the NMOC concentration or a site specific k as an alternative to the methods required in 40 CFR 60.754(a)(3) and (a)(4) if the method has been approved by the Administrator.~~

- (c) ~~Pursuant to 40 CFR 60.754(c), W~~when calculating emissions for PSD purposes, the owner or operator of each municipal solid waste landfill subject to 40 CFR 60.754 **Permittee** shall estimate the NMOC emission rate for comparison to the PSD major source and significance levels in 40 CFR 51.166 or 40 CFR 52.21 using AP-42 or other approved measurement procedures. If a collection system, which complies with the provisions of 40 CFR 60.752(b)(2) is already installed, the Permittee shall estimate the NMOC emission rate using the procedures provided in 40 CFR 60.754(b).

~~The Permittees initial NMOC report was submitted on October 6, 1997.~~

Indiana Department of Environmental Management Office of Air Quality

Technical Support Document (TSD) for a Part 70 Significant Source Modification and a Part 70 Significant Permit Modification

Source Background and Description

Source Name:	Jay County Landfill, Inc.
Source Location:	5825 W. South, Portland, Indiana 47371
County:	Jay
SIC Code:	4953
Operation Permit No.:	T075-12836-00029
Operation Permit Issuance Date:	March 26, 2002
Significant Source Modification No.:	075-17304-00029
Significant Permit Modification No.:	075-17783-00029
Permit Reviewer:	ERG/YC

The Office of Air Quality (OAQ) has reviewed a modification application from Jay County Landfill, Inc. relating to the construction and operation of the following emission units and pollution control devices:

- (a) One (1) municipal solid waste landfill, identified as LF1, constructed in 1970 and modified in 2003, with a maximum capacity of 13,092,500 tons of solid waste, and controlled by an existing utility flare, identified as FL1, which has a maximum flow rate of 1,500 standard cubic feet per minute (scfm), and exhausting through stack FLS1.
- (b) One (1) open flare, identified as FL1-R and constructed after 2003, with a maximum heat input capacity of 88.4 MMBtu per hour and a maximum flow rate of 3,000 scfm of landfill gas, and exhausting through stack FLS1-R.
- (c) Unpaved roads with public access.
- *(d) One (1) leachate storage tank, constructed in 2003, with a maximum capacity of 10,000 gallons.

* Note: This emission unit is considered an insignificant activity as defined in 326 IAC 2-7-1(21).

History

On April 16, 2003, Jay County Landfill, Inc. submitted an application to the OAQ requesting to expand their existing municipal solid waste landfill site by 12,470,000 cubic yards, which is equivalent to 9,352,500 tons of waste. Jay County Landfill, Inc. is an existing landfill site which has a capacity of 3,739,999 tons of solid waste. A Part 70 permit (#075-16124-00029) was issued to this source on March 26, 2002.

The Non-Methane Organic Compound (NMOC) concentration from the existing landfill site exceeded 50 Mg/yr in 2002. Therefore, this source is required to install a collection and control system, pursuant to 40 CFR 60.752(b)(2). The source stated that the collection and control system design plan will be submitted to IDEM for approval by the end of 2003. Currently, the VOC emissions from the existing landfill site are controlled by a 1,500 scfm utility flare. The source has

proposed to install a landfill gas recovery plant, which consists of four (4) landfill gas engines as the additional control system. The construction of the gas recovery plant was permitted in SSM #075-16124-00029 (issued on January 29, 2003), and the operation of this gas recovery plant was permitted in SPM #075-16132-00029 (issued on February 14, 2003).

Currently, the landfill gas generated from this site is about 1,300 scfm. The existing 1,500 scfm flare can handle all the landfill gas generated. The proposed gas recovery plant, which has a maximum flow rate of 1,300 scfm, is an optional control choice for this source. Once the gas recovery plant is constructed, the existing flare might become an idle unit since there is not enough LFG generated currently. The source stated that the proposed gas recovery plant is expected to start construction in fall 2003 and will use the landfill gas generated from the existing landfill site, not the expanded landfill site. Therefore, this landfill expansion project is not associated with the previous gas recovery plant project, which was permitted to construct in SSM #075-16124-00029, issued on January 29, 2003.

The source also proposed to install a 3,000 scfm open flare to handle overflow when the existing control device can not handle all the landfill gas generated from this site after the expansion. The existing flare FL1 will be removed upon the installation of the new 3,000 scfm flare.

Enforcement Issue

There are no enforcement actions pending.

Stack Summary

Stack ID	Operation	Height (feet)	Diameter (feet)	Flow Rate (acfm)	Temperature (°F)
FLS1-R	3,000 scfm flare	26	unknown	3,000	1,400

Recommendation

The staff recommends to the Commissioner that the Part 70 Significant Source Modification and the Part 70 Significant Permit Modification be approved. This recommendation is based on the following facts and conditions:

Unless otherwise stated, information used in this review was derived from the application and additional information submitted by the applicant.

An application for the purposes of this review was received on April 16, 2003. Additional information was received on June 18, 2003 and June 26, 2003.

Emission Calculations

See Appendix A of this document for detailed emissions calculations (pages 1 through 3). Note that the CO emission factor used in the flare emission calculations is from open flare manufacturers (0.15 lbs/MMBtu), instead of the one from AP-42, Table 13.5-1, which is for utility flares (0.37 lbs/MMBtu). Since it is impossible to perform stack testing for open flares, the CO emission factors in AP-42 are theoretical values based on mass balance calculations. However, the CO emission factor in AP-42, Table 13.5-1 is based on the combustion of crude propylene, not landfill gas. In addition, the source provided three stack tests results from other landfills show a CO emission factor of 0.003 lbs/MMBtu for enclosed flares and these results show that the CO emission factors are less than 0.01 lbs/MMBtu. Theoretically, enclosed flares have higher CO emissions than open flares because less access air is available during the combustion process. Therefore, the CO emission factor of 0.15 lbs/MMBtu for open flares is acceptable.

The CH₄, CO₂, and NMOC emissions are calculated by the EPA LandGEM model, Version 2.01; and the results are attached as Appendix B. The maximum Non-Methane Organic Compound

(NMOC) emissions from the expanded landfill is 97.5 Mg/yr, which is expected to occur in 2026. According to AP-42, Chapter 4.2, the landfill gas collection efficiency for regular covered landfills is 75%. Assuming that all the NMOC are VOC, the fugitive VOC emissions from the expanded landfill can be calculated as follows:

$$97.5 \text{ Mg/yr} \times 1.1 \text{ ton/Mg} \times (1-75\%) = 26.8 \text{ tons/yr.}$$

Potential To Emit of Modification

Pursuant to 326 IAC 2-1.1-1(16), Potential to Emit is defined as “the maximum capacity of a stationary source to emit any air pollutant under its physical and operational design. Any physical or operational limitation on the capacity of a source to emit an air pollutant, including air pollution control equipment and restrictions on hours of operation or type or amount of material combusted, stored, or processed shall be treated as part of its design if the limitation is enforceable by the U. S. EPA.”

This table reflects the PTE before controls. Control equipment is not considered federally enforceable until it has been required in a federally enforceable permit.

Pollutant	Potential To Emit (tons/year)
PM*	339
PM-10*	79.9
SO ₂	6.84
VOC*	28.4
CO	143
NO _x	26.3

*Note: This includes 330 tons/yr of fugitive PM emissions, 71.2 tons/yr of fugitive PM10 emissions, and 28.6 tons/yr of fugitive VOC emissions.

*HAP's	Potential To Emit (tons/year)
1,1-Dichloroethane	0.55
Acrylonitrile	0.79
Dichloromethane	2.86
Ethylbenzene	1.15
Hexane	1.33
Methyl ethyl ketone	1.20
Perchloroethylene	1.46
Trichloroethylene	0.87
Vinyl chloride	1.08
Toluene	8.53
Xylene	3.03
Other HAPs	2.15
TOTAL	25.0

*Note: These are the HAP emissions from the landfill without control.

Justification for Modification

This modification is being performed through a Part 70 Significant Source Modification because: (1) the potential to emit PM, PM10, and NO_x is each greater than 25 tons per year (326 IAC 2-7-10.5(f)(4)); (2) as the potential to emit HAPs is equal to 25 tons/yr for any combination of HAPs (326 IAC 2-7-10.5(f)(6)); and (3) as the potential to emit CO is greater than 100 tons per year (326 IAC 2-7-10.5(f)(7)). The permit modification is being performed through a Part 70 Significant Permit Modification pursuant to 326 IAC 2-7-12(d) because this is a modification under a provision of Title I of CAA.

County Attainment Status

The source is located in Jay County.

Pollutant	Status
PM-10	Attainment
SO ₂	Attainment
NO ₂	Attainment
Ozone	Attainment
CO	Attainment
Lead	Attainment

- (a) Volatile organic compounds (VOC) are precursors for the formation of ozone. Therefore, VOC emissions are considered when evaluating the rule applicability relating to the ozone standards. Jay County has been designated as attainment or unclassifiable for ozone. Therefore, VOC emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.
- (b) Jay County has been classified as attainment or unclassifiable for all other criteria pollutants. Therefore, these emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.
- (c) Fugitive Emissions
 Since this type of operation is not in one of the 28 listed source categories under 326 IAC 2-2, and since there are no applicable New Source Performance Standards that were in effect on August 7, 1980, the fugitive PM emissions are not counted toward determination of PSD applicability.

Source Status

Existing Source PSD Definition (emissions after controls, based upon 8760 hours of operation per year at rated capacity and/or as otherwise limited):

Pollutant	Emissions (tons/year)
PM	13.7
PM-10	13.7
SO ₂	17.8
VOC	26.9
CO	205
NO _x	102

- (a) This existing source is not a major stationary source because no attainment regulated pollutant is emitted at a rate of 250 tons per year or more, and it is not one of the 28 listed source categories.
- (b) These emissions are based upon the Addendum to the Technical Support Document (ATSD) for the first Significant Source Modification #075-16124-00029, issued January 29, 2003.

Potential to Emit of Modification After Issuance

The table below summarizes the potential to emit, reflecting all limits, of the significant emission units after controls. The control equipment is considered federally enforceable only after issuance of this Part 70 source modification.

	Potential to Emit (tons/year)						
Process/facility	PM	PM-10	SO ₂	VOC	CO	NO _x	HAPs
Expanded Landfill Site (Fugitive)	-	-	-	26.8	-	-	6.25
3,000 scfm Flare	8.70	8.70	6.84	1.55	58.1	26.3	Less than 0.54
*Removal of 1,500 scfm Flare	(0)	(0)	(0)	(1.36)	(72.5)	(13.3)	(Negligible)
Leachate Tank (Insignificant)	-	-	-	Negligible	-	-	Negligible
Unpaved Roads (Fugitive)	Less than 33.0	Less than 7.12	-	-	-	-	-
**PTE of This Modification	8.70	8.70	6.84	0.19	(14.4)	13.0	Less than 6.79
***Total PTE of the Existing Source	13.7	13.7	17.8	26.9	205	102	5.65
Total PTE of the Entire Source After This Modification	22.4	22.4	24.6	27.1	190.6	115	Less than 12.4
PSD Significant Thresholds	250	250	250	250	250	250	NA

Note: (*) The PTE of the existing 1,500 scfm flare is from the Technical Support Document (TSD) for T075-12836-00029, issued on March 26, 2002. The PTE in "()" means negative numbers.
(**) Since this source is not in one of 28 source categories, the fugitive VOC and PM/PM10 emissions are not counted toward the total PTE of this modification for PSD review purposes.
(***) The PTE of the existing source is from the Addendum to the Technical Support Document (ATSD) for SSM #075-16124-00029, issued on January 29, 2003.

This modification (landfill expansion project) is not related to the gas recovery plant which was permitted to be constructed in SSM#075-16124-00029, issued on January 29, 2003. The gas recovery plant will be used to control the landfill gas generated from the existing landfill site and will start operation before the source starts accepting waste in the expanded landfill.

This modification to an existing minor stationary source is not major because the potential to emit of this modification is less than the PSD significant thresholds and the source will still maintain their PSD minor source after this modification. Therefore, pursuant to 326 IAC 2-2, the PSD requirements do not apply.

Federal Rule Applicability

- (a) The existing municipal solid waste landfill is subject to the requirements of the New Source Performance Standard for Municipal Solid Waste Landfills (326 IAC 12 and 40 CFR 60.750-759, Subpart WWW) because this landfill site commenced modification and accepting waste after May 30, 1991. The requirements of 40 CFR 60, Subpart WWW previously applied to this landfill and are contained in the source's Title V permit #075-12836-00029, issued on March 26, 2002.

In addition, the NMOC emissions from this source exceeded 50 Mg/yr in 2002, therefore, this source is now subject to the collection and control system requirements in 40 CFR 60.752(b)(2). Pursuant to 40 CFR 60.752(b)(2)(ii)(A), if the NMOC emission rate from the landfill site is equal or greater than 50 megagrams per year, the owner or operator shall install a control system. Currently, there is one 1,500 scfm utility flare (FL1) on site as control. The source also proposed to install a landfill gas recovery plant which was

permitted to construct and operate in SSM #075-16124-00029 (issued on January 29, 2003) and SPM #075-16132-00029 (issued on February 14, 2003).

The source also proposed to install a 3,000 scfm open flare in this modification as a supplemental control device which will replace the existing 1,500 scfm flare (FL1). Pursuant to 40 CFR 60.756, the source using an open flare shall install, calibrate, maintain, and operate the following equipment according to the manufacturer's specifications:

- (1) Heat sensing device, such as an ultraviolet beam sensor or thermocouple, at the pilot light or the flame itself to indicate the continuous presence of a flame
 - (2) A device that records flow to or bypass of the flare. The Permittee shall either install, calibrate, and maintain a gas flow rate measuring device that shall record the flow to the control device at least every fifteen minutes; or secure the bypass line valve in the closed position with a car-seal or a lock-and-key type configuration. A visual inspection of the seal or closure of the seal or closure mechanism shall be performed at least once every month to ensure that the valve is maintained in the closed position and that the gas flow is not diverted through the bypass line.
- (b) The proposed leachate storage tank at this source has a capacity less than 40 cubic meters (10,560 gallons). Therefore, the New Source Performance Standards for Volatile Organic Liquid Storage Vessels for which construction, reconstruction, or modification commenced after July 23, 1984 (40 CFR 60.110b - 117b, Subpart Kb) are not applicable to this tank.
- (c) This landfill receives asbestos-containing material. Therefore, this source is subject to the National Emission Standards for Hazardous Air Pollutants (NESHAPs) for Asbestos Active Waste Disposal Site (326 IAC 14 and 40 CFR 61, Subpart M). The requirements of 40 CFR 61, Subpart M previously applied to this landfill and are contained in the source's Title V permit #075-12836-00029, issued on March 26, 2002.
- (d) This source has accepted waste since November 8, 1987, has a design capacity greater than 2.5 million megagrams, and has uncontrolled NMOC emissions greater than 50 megagrams per year (Mg/yr). Therefore, the source is subject to the requirements of National Emission Standards for Hazardous Air Pollutants (NESHAPs) for Municipal Solid Waste Landfills (40 CFR 63.1930 - 63.1952, Subpart AAAA). This landfill site does not include a bioreactor, as defined in 40 CFR 63.1990.

Since this NESHAP was promulgated on January 16, 2003 and was not included in the source's most recent permit modification (#075-16132-00029, issued February 14, 2003), the conditions for the requirement of 40 CFR 63, Subpart AAAA will be added into this source modification and permit modification. The additional conditions are listed as the following:

- (1) Pursuant to 40 CFR 63.1955, the Permittee shall:
 - (i) Comply with the requirements of 40 CFR 60, Subpart WWW.
 - (ii) If the source is required by 40 CFR 60.752(b)(2) to install a collection and control system, the source shall comply with the general and continuing compliance requirements in 40 CFR 63.1960 through 40 CFR 63.1985.
 - (iii) For approval of collection and control systems that include any alternatives to the operational standards, test methods, procedures, compliance measures, monitoring, recordkeeping or reporting provisions, the Permittee must follow the procedures in 40 CFR 60.752(b)(2). If

alternatives have already been approved under 40 CFR part 60 subpart WWW or the Federal plan, or EPA approved and effective State or tribal plan, these alternatives can be used to comply with this subpart, except that all affected sources must comply with the startup, shutdown, and malfunction (SSM) requirements in Subpart A of this part as specified in Table 1 of this subpart and all affected sources must submit compliance reports every 6 months as specified in 40 CFR 63.1980(a) and (b), including information on all deviations that occurred during the 6-month reporting period. Deviations (as defined in 40 CFR 63.1965) for continuous emission monitors or numerical continuous parameter monitors must be determined using a 3 hour monitoring block average (as defined in 40 CFR 63.1975).

- (2) Pursuant to 40 CFR 63.1960, compliance with 40 CFR 63, Subpart AAAA is determined by the following:
 - (i) The same way it is determined for 40 CFR 60, Subpart WWW, including performance testing, monitoring of the collection system, continuous parameter monitoring, and other credible evidence.
 - (ii) Continuous parameter monitoring data, collected under 40 CFR 60.756(b)(1), (c)(1), and (d) of subpart WWW, are used to demonstrate compliance with the operating conditions for control systems. If a deviation (as defined in 40 CFR 63.1965) occurs, the Permittee has failed to meet the control device operating conditions described in 40 CFR 60, Subpart WWW and has deviated from the requirements of this subpart.
 - (iii) The Permittee must develop and implement a written SSM plan according to the provisions in 40 CFR 63.6(e)(3). A copy of the SSM plan must be maintained on site. Failure to write, implement, or maintain a copy of the SSM plan is a deviation from the requirements of this subpart.
- (3) Pursuant to 40 CFR 63.1980, the Permittee has the following record keeping and reporting requirements:
 - (i) The Permittee shall keep records and reports as specified in 40 CFR 60, Subpart WWW, or in the Federal plan, EPA approved State plan or tribal plan that implements 40 CFR 60, Subpart Cc, whichever applies to this landfill, with one exception: The Permittee must submit the annual report described in 40 CFR 60.757(f) every 6 months.
 - (ii) The Permittee shall keep records and reports as specified in the general provisions of 40 CFR part 60 and 40 CFR 63 as shown in Table 1 of 40 CFR 63, Subpart AAAA. Applicable records in the general provisions include items such as SSM plans and the SSM plan reports.
- (e) There is no specific emission limit for this landfill site. Therefore, this modification does not involve a pollutant-specific emissions unit:
 - (1) with the potential to emit before controls equal to or greater than one hundred (100) tons per year, and
 - (2) that is subject to an emission limit and has a control device that is necessary to meet that limit.

Therefore, the requirements of 40 CFR 64 (Compliance Assurance Monitoring) are not applicable to this modification.

State Rule Applicability - Entire Source

326 IAC 2-2 (Prevention of Significant Deterioration (PSD))

This source was constructed in 1970 and modified in 2003. This source is not in 1 of the 28 source categories and the potential to emit all criteria pollutants and PM from the existing source is less than two hundred and fifty (250) tons per year. Therefore, the existing source is a PSD minor source. The potential to emit all criteria pollutants and PM from this modification is less 250 tons/yr. Therefore, the requirements of 326 IAC 2-2 are not applicable.

326 IAC 2-4.1 (New Source Toxics Control)

This landfill site is subject to 40 CFR 63, Subpart AAAAA, therefore, the requirements of 326 IAC 2-4.1 (MACT) are not applicable to this modification.

326 IAC 5-1 (Opacity Limitations)

Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-3 (Temporary Alternative Opacity Limitations), opacity shall meet the following, unless otherwise stated in this permit:

- (a) Opacity shall not exceed an average of forty percent (40%) any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.
- (b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor) in a six (6) hour period.

State Rule Applicability - Landfill LF-1

326 IAC 8-8.1 (Municipal Solid Waste Landfills Not Located in Clark, Floyd, Lake, and Porter Counties)

This source is located in Jay County and has commenced construction after May 30, 1991. Therefore, this landfill is not subject to the requirements of 326 IAC 8-8.1 (Municipal Solid Waste Landfills Not Located in Clark, Floyd, Lake, and Porter Counties).

State Rule Applicability - 3,000 scfm Open Flare (FL1-R)

326 IAC 9-1-2 (Carbon Monoxide Emission Requirements)

This source is not among the listed source categories in 326 IAC 9-1-2. Therefore, the requirements of 326 IAC 9-1-2 are not applicable to this flare.

326 IAC 10-1-3 (Nitrogen Oxide Emission Requirements)

This source is not located in Clark or Floyd County. Therefore, the requirements of 326 IAC 10-1-3 are not applicable to this flare.

State Rule Applicability - Unpaved Roads

326 IAC 6-4 (Fugitive Dust Emissions)

Pursuant to 326 IAC 6-4, the source shall not generate fugitive dust to the extent that some portion of the material escapes beyond the property line or boundaries of the property, right-of-way, or easement on which the source is located.

326 IAC 6-5-1 (Fugitive Particulate Matter Emission Limitations)

This source is located in Jay County and has received all the necessary preconstruction approvals before December 13, 1985. Pursuant to 326 IAC 6-5-1(b), the unpaved roads at this source are not subject to the requirements of 326 IAC 6-5-1.

State Rule Applicability - Leachate Storage Tank (Insignificant Activity)

326 IAC 8-9 (Volatile Organic Liquid Storage Vessels)

This source is not located in Clark, Floyd, Lake, or Porter County. Therefore, the requirements of 326 IAC 8-9-1 are not applicable to the proposed leachate storage tank.

Compliance Requirements

Permits issued under 326 IAC 2-7 are required to ensure that sources can demonstrate compliance with applicable state and federal rules on a more or less continuous basis. All state and federal rules contain compliance provisions, however, these provisions do not always fulfill the requirement for a more or less continuous demonstration. When this occurs IDEM, OAQ, in conjunction with the source, must develop specific conditions to satisfy 326 IAC 2-7-5. As a result, compliance requirements are divided into two sections: Compliance Determination Requirements and Compliance Monitoring Requirements.

Compliance Determination Requirements in Section D of the permit are those conditions that are found more or less directly within state and federal rules and the violation of which serves as grounds for enforcement action. If these conditions are not sufficient to demonstrate continuous compliance, they will be supplemented with Compliance Monitoring Requirements, also Section D of the permit. Unlike Compliance Determination Requirements, failure to meet Compliance Monitoring conditions would serve as a trigger for corrective actions and not grounds for enforcement action. However, a violation in relation to a compliance monitoring condition will arise through a source's failure to take the appropriate corrective actions within a specific time period.

The compliance monitoring requirements applicable to this modification are as follows:

1. Pursuant to 40 CFR 60.756, the source using an open flare shall install, calibrate, maintain, and operate according to the manufacturer's specifications the following equipment:
 - (a) Heat sensing device, such as an ultraviolet beam sensor or thermocouple, at the pilot light or the flame itself to indicate the continuous presence of a flame
 - (b) A device that records flow to or bypass of the flare. The Permittee shall either install, calibrate, and maintain a gas flow rate measuring device that shall record the flow to the control device at least every fifteen minutes; or secure the bypass line valve in the closed position with a car-seal or a lock-and-key type configuration. A visual inspection of the seal or closure of the seal or closure mechanism shall be performed at least once every month to ensure that the valve is maintained in the closed position and that the gas flow is not diverted through the bypass line.

This monitoring conditions are necessary to ensure compliance with 40 CFR 60.752 (b)(2)(ii) and 40 CFR 63, Subpart AAAA.

Proposed Changes

A.1 General Information [326 IAC 2-7-4(c)] [326 IAC 2-7-5(15)] [326 IAC 2-7-1(22)]

The Permittee owns and operates a municipal solid waste landfill

Responsible Official:	Vice President of Operations
Source Address:	5825 W. South, Portland, Indiana 47371
Mailing Address:	P.O. Box 1264, Portland, Indiana 47371
SIC Code:	4953
County Location:	Jay

Source Location Status: Attainment for all criteria pollutants
Source Status: Part 70 Permit Program
Minor Source, under PSD Rules;
~~Major~~ **Minor** Source, Section 112 of the Clean Air Act
Not 1 of 28 Source Categories

A.2 Emission Units and Pollution Control Equipment Summary [326 IAC 2-7-4(c)(3)] [326 IAC 2-7-5(15)]

This stationary source consists of the following emission units and pollution control devices:

- (a) One (1) municipal solid waste landfill, identified as LF1, constructed in 1970 **and modified in 2003**, with a maximum capacity of ~~3,739,999~~ **13,092,500** tons of **solid waste**, and controlled by a utility flare, identified as FL1, with a maximum flow rate of 1500 cubic feet per minute (**scfm**), and exhausting through stack FLS1.
- (c) **One (1) open flare, identified as FL1-R and constructed after 2003, with a maximum heat input capacity of 88.4 MMBtu per hour and a maximum flow rate of 3,000 scfm of landfill gas, and exhausting through stack FLS1-R. Existing Flare FL1 will be removed upon installation of flare FL1-R.**
- (d) **Unpaved roads with public access.**

SECTION D.1 FACILITY OPERATION CONDITIONS

Facility Description [326 IAC 2-7-5(15)]:

- (a) One (1) municipal solid waste landfill, identified as LF1, constructed in 1970 **and modified in 2003**, with a maximum capacity of ~~3,739,999~~ **13,092,500 tons of solid waste**, and controlled by a utility flare, identified as FL1, with a maximum flow rate of 1500 cubic feet per minute (**scfm**), and exhausting through stack FLS1.
- (b) Four (4) 1,148 horsepower (8.9 MMBtu/hr) engines, identified as EG1, EG2, EG3, and EG4, using landfill gas as a fuel, each with a maximum landfill gas feeding rate of 325 scfm, and exhausting through stacks ES1, ES2, ES3, and ES4, respectively. Each engine is equipped with a crankcase for engine oil, which consumes a maximum of 240 gallons of engine oils per year and exhausts through a crankcase breather vent.
- (c) **One (1) open flare, identified as FL1-R and constructed after 2003, with a maximum heat input capacity of 88.4 MMBtu per hour and a maximum flow rate of 3,000 scfm of landfill gas, and exhausting through stack FLS1-R. Existing Flare FL1 will be removed upon installation of flare FL1-R.**
- (d) **Unpaved roads with public access.**

(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)

Emissions Standards and Limitations

D.1.1 General Provisions Relating to NSPS and NESHAP [326 IAC 12-1-1] [40 CFR Part 60, Subpart A] [326 IAC 14-1-1] [40 CFR 61, Subpart M] [326 IAC 20-1-1] [40 CFR 63, Subpart A]

- (a) The provisions of 40 CFR Part 60, Subpart A - General Provisions, which are incorporated by reference in 326 IAC 12-1-1, apply to the facility described in this section except when otherwise specified in 40 CFR Part 60, Subpart WWW.
- (b) **The provisions of 40 CFR Part 61, Subpart A - General Provisions, which are incorporated as 326 IAC 14-1-1, apply to the facility described in this section except when otherwise specified in 40 CFR Part 61, Subpart M.**
- (c) **The provisions of 40 CFR Part 63, Subpart A - General Provisions, which are incorporated by reference in 326 IAC 20-1-1, apply to the facility described in this section except when otherwise specified in 40 CFR Part 63, Subpart AAAA.**

D.1.2 Municipal Solid Waste Landfill NSPS [326 IAC 12] [40 CFR 60.752, Subpart WWW]

The municipal solid waste landfill has a design capacity greater than 2.5 million megagrams (Mg) and shall ~~either comply with 40 CFR 60.752 (b)(2). or calculate the non-methane organic compound (NMOC) emission rate for the landfill using the procedures specified in 40 CFR 60.754.~~

D.1.3 Municipal Solid Waste Landfill NESHAP [40 CFR 63, Subpart AAAA]

The municipal solid waste landfill has a design capacity greater than 2.5 million megagrams (Mg) and has estimated uncontrolled NMOC emissions greater than 50 Mg/yr. Therefore, this landfill shall comply with 40 CFR 63, Subpart AAAA.

D.1.34 Standards for air emissions from municipal solid waste landfills [40 CFR 60.752]

D.1.45 Operational Standards for Collection and Control Systems [40 CFR 60.753]

D.1.56 National Emission Standards for Hazardous Air Pollutants for Active Asbestos Waste Disposal Sites [40 CFR 61.154, Subpart M]

D.1.7 Municipal Solid Waste Landfill NESHAP [326 IAC 20] [40 CFR 63, Subpart AAAA]

Pursuant to 40 CFR 63.1955, the Permittee shall:

- (a) Comply with the requirements of 40 CFR 60, Subpart WWW.
- (b) If the Permittee is required by 40 CFR 60.752(b)(2) to install a collection and control system, the Permittee shall comply with the general and continuing compliance requirements in 40 CFR 63.1960 through 40 CFR 63.1985.
- (c) For approval of collection and control systems that include any alternatives to the operational standards, test methods, procedures, compliance measures, monitoring, recordkeeping or reporting provisions, the Permittee must follow the procedures in 40 CFR 60.752(b)(2). If alternatives have already been approved under 40 CFR part 60 subpart WWW or the Federal plan, or EPA approved and effective State or tribal plan, these alternatives can be used to comply with this subpart, except that all affected sources must comply with the startup, shutdown, and malfunction (SSM) requirements in Subpart A of this part as specified in Table 1 of this subpart and all affected sources must submit compliance reports every 6 months as specified in 40 CFR 63.1980(a) and (b), including information on all deviations that occurred during the 6-month reporting period. Deviations (as defined in 40 CFR 63.1965) for continuous emission monitors or numerical continuous parameter monitors must be determined using a 3 hour monitoring block average (as defined in 40 CFR 63.1975).

D.1.8 PSD Minor Limit [326 IAC 2-2]

The Permittee shall remove the existing 1,500 scfm flare before the initial operation of the 3,000 scfm flare.

Compliance Determination Requirements

D.1.69 Testing Requirements [326 IAC 2-7-6(1),(6)] [40 CFR 60.754] (1)

- (b) Pursuant to 40 CFR 60.754(d):

For the performance testing required in 40 CFR 60.752(b)(2)(iii)(B), Method 25, **25C** or Method 18 of appendix A of 40 CFR 60 shall be used to determine compliance with 98 weight percent efficiency or the 20 ppmv outlet concentration level, unless another method to demonstrate compliance has been approved by the Office of Air Quality (OAQ) or the U.S. EPA as provided by 40 CFR 60.752(b)(2)(i)(B). **In cases where the outlet concentration is less than 50 ppm NMOC as carbon (8 ppm NMOC as hexane), Method 25A should be used in place of Method 25.** If using Method 18 of appendix A, the minimum list of compounds to be tested shall be those published in the most recent Compilation of Air Pollutant Emission Factors (AP-42). The following equation shall be used to calculate efficiency:

$$\text{Control Efficiency} = (\text{NMOC}_{\text{in}} - \text{NMOC}_{\text{out}}) / (\text{NMOC}_{\text{in}})$$

where,

NMOC_{in} = mass of NMOC entering the control device

NMOC_{out} = mass of NMOC exiting control device

D.1.10 Compliance Determination [40 CFR 63.1960]

Pursuant to 40 CFR 63.1960, compliance with 40 CFR 63, Subpart AAAA is determined by the following:

- (a) The same way it is determined for 40 CFR 60, Subpart WWW, including performance testing, monitoring of the collection system, continuous parameter monitoring, and other credible evidence.
- (b) Continuous parameter monitoring data, collected under 40 CFR 60.756(b)(1), (c)(1), and (d) of subpart WWW, are used to demonstrate compliance with the operating conditions for control systems. If a deviation (as defined in 40 CFR 63.1965) occurs, the Permittee has failed to meet the control device operating conditions described in 40 CFR 60, Subpart WWW and has deviated from the requirements of this subpart.
- (c) The Permittee must develop and implement a written SSM plan according to the provisions in 40 CFR 63.6(e)(3). A copy of the SSM plan must be maintained on site. Failure to write, implement, or maintain a copy of the SSM plan is a deviation from the requirements of this subpart.

~~Compliance Monitoring Requirements [326 IAC 2-7-6(1)] [326 IAC 2-7-5(1)]~~

D.1.711 Monitoring [40 CFR 60.756] Except as provided in 40 CFR 60.752(b)(2)(i)(B)

- (c) The Permittee seeking to comply with 40 CFR 60.752(b)(2)(iii) using an open flare shall install, calibrate, maintain, and operate according to the manufacturers specifications the following equipment **(except as otherwise provided for in 40 CFR 60, Subpart WWW or approved variances contained within the Collection and Control System Design Plan)**:

D.1.812 Compliance Provisions [40 CFR 60.755]

- (e) The provisions of 40 CFR 60.755 shall apply at all times, except during periods of startup, shutdown, or malfunction, provided that the duration of start-up, shutdown, or malfunction, shall not exceed five (5) days for collection systems and shall not exceed one (1) hour for treatment or control devices, **except as otherwise provided for in 40 CFR 60, Subpart WWW or approved variance contained within the Collection and Control System Design Plan.**

D.1.913 Non Methane Organic Compound (NMOC) Rate Calculation [40 CFR 60.754]

~~D.1.4014 Reporting Requirements [40 CFR 60.757]~~

~~D.1.4115 Record Keeping Requirements [326 IAC 12] [40 CFR 60.758] Pursuant to 40 CFR 60.758~~

D.1.16 Record Keeping and Reporting Requirements for NESHAP for Municipal Solid Waste Landfills [40 CFR 63.1980]

Pursuant to 40 CFR 63.1980, the Permittee shall:

- (a) Keep records and reports as specified in 40 CFR 60, Subpart WWW, or in the Federal plan, EPA approved State plan or tribal plan that implements 40 CFR 60, Subpart Cc, whichever applies to this landfill, with one exception: The Permittee must submit the annual report described in 40 CFR 60.757(f) and Condition D.1.13(f) every 6 months.
- (b) Keep records and reports as specified in the general provisions of 40 CFR 60 and 40 CFR 63 as shown in Table 1 of 40 CFR 63, Subpart AAAA. Applicable records in

**the general provisions include items such as SSM plans and the SSM plan reports.
The SSM Plan report is due semi-annually.**

Conclusion

The construction of this proposed modification shall be subject to the conditions of the proposed Part 70 Significant Source Modification No. 075-17304-00029, and the operation of this proposed modification shall be subject to the conditions of the proposed Part 70 Significant Permit Modification No. 075-17783-00029.

Appendix A: Emission Calculations
HAPs Emissions
From the Expanded Landfill

Company Name: Jay County Landfill, Inc.
Address: 5825 West South, Portland, IN 47371
SSM#: 075-17304-00029
Reviewer: ERG/YC
Date: August 21, 2003

1. Landfill Gas (LFG) Production Rate:

4.88E+07 m³/yr (= CH₄ + CO₂ production rate from the EPA Landfill Air Emission Model - Appendix B)

2. Collection Efficiency:

75% (AP42, Chapter 2.4)

3. Control Efficiency:

98% (required by NSPS)

CAS Number	Compound	*HAP Concentration (ppmv)	Molecular Weight	Uncontrolled HAPs Emissions (tons/yr)	Fugitive HAPs Emissions (tons/yr)	Captured HAPs after Control Devices (tons/yr)	Total HAP Emissions (tons/yr)
71-55-6	1,1,1-Trichloroethane (methyl chloroform)	0.48	133.41	0.151	0.038	0.002	0.040
79-34-5	1,1,2,2-Tetrachloroethane	1.11	167.85	0.439	0.110	0.007	0.116
75-34-3	1,1-Dichloroethane (ethylidene dichloride)	2.35	98.97	0.548	0.137	0.008	0.145
75-35-4	1,1-Dichloroethene (vinylidene chloride)	0.20	96.94	0.046	0.011	0.001	0.012
107-06-2	1,2-Dichloroethane (ethylene dichloride)	0.41	98.96	0.096	0.024	0.001	0.025
78-87-5	1,2-Dichloropropane (propylene dichloride)	0.18	112.99	0.048	0.012	0.001	0.013
107-13-1	Acrylonitrile	6.33	53.06	0.791	0.198	0.012	0.210
75-15-0	Carbon disulfide	0.58	76.13	0.104	0.026	0.002	0.028
56-23-5	Carbon tetrachloride	0.00	153.84	0.001	0.000	0.000	0.000
463-58-1	Carbonyl sulfide	0.49	60.07	0.069	0.017	0.001	0.018
108-90-7	Chlorobenzene	0.25	112.56	0.066	0.017	0.001	0.018
75-00-3	Chloroethane (ethyl chloride)	1.25	64.52	0.190	0.047	0.003	0.050
67-66-3	Chloroform	0.03	119.39	0.008	0.002	0.000	0.002
75-09-2	Dichloromethane (methylene chloride)	14.30	84.94	2.861	0.715	0.043	0.758
100-41-4	Ethylbenzene	4.61	106.16	1.153	0.288	0.017	0.305
110-54-3	Hexane	6.57	86.18	1.334	0.333	0.020	0.353
78-93-3	Methyl ethyl ketone	7.09	72.11	1.204	0.301	0.018	0.319
108-10-1	Methyl isobutyl ketone	1.87	100.16	0.441	0.110	0.007	0.117
127-18-4	Perchloroethylene (tetrachloroethene)	3.73	165.83	1.457	0.364	0.022	0.386
79-01-6	Trichloroethylene (trichloroethene)	2.82	131.4	0.873	0.218	0.013	0.231
75-01-4	Vinyl chloride	7.34	62.5	1.080	0.270	0.016	0.286
71-43-2	Benzene	1.91	78.11	0.351	0.088	0.005	0.093
74-87-3	Methyl chloride (Chloromethane)	1.21	50.49	0.144	0.036	0.002	0.038
108-88-3	Toluene	39.30	92.13	8.527	2.132	0.128	2.260
1330-20-7	Xylene (isomers and mixture)	12.10	106.16	3.025	0.756	0.045	0.802
	Mercury Compounds	0.000292	200.61	0.000	0.000	0.000	0.000
7647-01-0	**Hydrogen Chloride	126.4	36	-	-	0.161	0.161
Total Emissions				25.0	6.25	0.54	6.79

*The HAP concentrations are from AP-42, Chapter 2.4 - Municipal Solid Waste Landfills - Table 2.4-1 (AP-42, 11/98)

** Assume that the HCl concentration is the total chlorinated compound concentration in LFG. HCl only occurs in the combustion process of the control device.

Methodology

Uncontrolled HAPs Emissions (tons/yr) = LFG Production Rate (m³/yr) x 35.31 ft³/m³ x (Concentration (ppmv) /1000,000) x 1 atm / Gas Constant (0.7032 atm-cf/lb mole-R) / Temp (60F+ 460) x Mole weight of HAPs (lbs/lbs mole) x (1 ton/2000 lbs)

Fugitive HAP Emissions = Uncontrolled HAPs Emissions (tons/yr) x (1 - Collection Efficiency)

Captured HAPs after control device = Uncontrolled HAPs Emissions (tons/yr) x Collection Efficiency x (1 - Control Efficiency)

HCl Emissions (tons/yr) = LFG Production Rate (m³/yr) x 35.31 ft³/m³ x Chlorinated Compound Concentrations (ppmv) /1000,000 x 1 atm / Gas Constant (0.7032 atm-cf/lb mole-R) / Temp (60F+ 460) x Mole weight of HCl (lbs/lbs mole) x (1 ton/2000 lbs) x Collection Efficiency x (1 - Control Efficiency)

Total HAP Emissions (tons/yr) = Fugitive HAP Emissions (tons/yr) + HAPs after Control Device (tons/yr)

Appendix A: Emission Calculations
Combustion Emissions
From the 3,000 scfm Utility Flare (FL1-R)

Company Name: Jay County Landfill, Inc.
Address: 5825 West South, Portland, IN 47371
SSM#: 075-17304-00029
Reviewer: ERG/YC
Date: August 21, 2003

Fuel Input
MMBtu/hr

Flow Rate
scfm

88.4

3,000

	Pollutant					
	PM ^a	PM10 ^a	SO ₂ ^c	NOx ^b	CO ^e	NMOC ^d
Emission Factor in lb/MMBtu	177.0 (ug/dsl)	177.0 (ug/dsl)	49.60 (ppmv)	0.068 (lbs/MMBtu)	0.15 (lbs/MMBtu)	557.8 (ppmv)
Potential Emission in tons/yr	8.70	8.70	6.84	26.3	58.1	1.55

^a Emission Factors are from AP-42, Chapter 13.5 - Industrial Flares -Table 13.5-1 - Soot for average smoke flare (AP-42, 01/95).

Assume PM emissions equal to PM10 emissions.

^b Emission Factors are from AP-42, Chapter 13.5 - Industrial Flares, Table 13.5-1 (AP-42, 01/95)

^c The total inlet concentration of Sulfur content compounds in AP-42, Chapter 2.4 - Municipal Solid Waste Landfills - Table 2.4-1 (AP-42, 11/98)

^d The NMOC concentration is based on the default value in EPA Landfill Emission Model, Version 2.01.

^e The CO emission factor is from the flare manufacturer.

Methodology

PM/PM10 Emissions (tons/yr) = Flow Rate (scfm) x 60 (min/hr) x 28.317 (l/scf) x Emission Factor (ug/dsl) x 1g/1000000 ug x 1 lbs/454 g x 8760 (hr/yr) x 1 ton/2000 lbs

SO₂ Emissions (tons/yr) = Flow Rate (scfm) x Emission Factor (ppmv) /1000,000 x 1 atm / Gas Constant (0.7032 atm-cf/lb mole-R) / Temp (60F+ 460)
x Mole weight of SO₂ (64 lbs/lbs mole) x 60 min/hr x 8760 hr/yr x 1 ton/2000 lbs

NOx/CO Emissions (tons/yr) = Max. Heat Input (MMBtu/hr) x Emission Factor (lbs/MMBtu) x 8760 hr/yr x 1 ton/2000 lbs

NMOC Emissions (tons/yr) = Flow Rate (scfm) x Emission Factor (ppmv) /1000,000 x 1 atm / Gas Constant (0.7032 atm-cf/lb mole-R) / Temp (60F+ 460)
x Mole weight of Hexane (lbs/lbs mole) x 60 min/hr x 8760 hr/yr x 1 ton/2000 lbs x 75% collection efficiency x (1-98% control efficiency)

**Appendix A: Emission Calculations
Fugitive Emissions
From Unpaved Roads**

**Company Name: Jay County Landfill, Inc.
Address: 5825 West South, Portland, IN 47371
SSM#: 075-17304-00029
Reviewer: ERG/YC
Date: August 21, 2003**

1. Emission Factors:

According to AP42, Chapter 13.2.2 - Unpaved Roads (09/98), the PM/PM10 emission factors for unpaved roads can be estimated from the following equation:

$$E = \frac{k \times (s/12)^a \times (w/3)^b}{(M_{dry}/0.2)^c}$$

where:

E = emission factor (lb/vehicle mile traveled)	6.4 % (AP-42, Table 13.2.2-1)
s = surface material silt content (%) =	19.4 tons (see the calculations below)
w = mean vehicle weight (tons) =	0.2 % (AP-42, Chapter 13.2.2)
M _{dry} = surface material moisture content (%) =	10 for PM and 2.6 for PM10
k = empirical constant =	0.8
a = empirical constant =	0.5 for PM and 0.4 for PM10
b = empirical constant =	0.4 for PM and 0.3 for PM10
c = empirical constant =	

$$\text{PM Emission Factor} = \frac{10 \times (6.0/12)^{0.8} \times (19.4/3)^{0.5}}{(0.2/0.2)^{0.4}} = 15.4 \text{ lbs/mile}$$

$$\text{PM10 Emission Factor} = \frac{2.6 \times (6.0/12)^{0.8} \times (19.4/3)^{0.4}}{(0.2/0.2)^{0.3}} = 3.32 \text{ lbs/mile}$$

2. Potential to Emit (PTE) of PM/PM10 Before Control from Unpaved Roads:

Vehicle Type	*Weight of Unloaded Vehicles (tons)	*Weight of Loaded Vehicles (tons)	Ave. Vehicle Weight (tons)	*Total Trip Number (trips/yr)	*Traffic Component (%)	Component Vehicle Weight (tons)	Vehicle Mile Traveled (VMT) (miles/yr)	PTE of PM (tons/yr)	PTE of PM10 (tons/yr)
Transfer Trailer	18	40	29	450	1.83%	0.53	1,111	8.54	1.84
Fron End Loader	19	29	24	450	1.83%	0.44	1,111	8.54	1.84
Rear End Loader	18	30	24	2,000	8.13%	1.95	4,937	37.97	8.19
Roll-Off Container	20	32	26	10,500	42.69%	11.10	25,921	199.33	43.00
Dump Truck	10	22	16	700	28.46%	4.55	1,728	13.29	2.87
Private Vehicle	2	3	2.5	100	4.07%	0.10	247	1.90	0.41
Leachate Tanker	18	40	29	376	1.53%	0.44	928	7.14	1.54
2nd Road Vehicles	2	3	2.5	2,820	11.47%	0.29	6,962	53.53	11.55
Total					100%	19.4	42945	330	71.2

* This information is provided by the source.

Methodology

Ave. Vehicle Weight (ton) = (Weight of Unloaded Vehicles + Weight of Loaded Vehicles) / 2

Component Vehicle Weight = Ave. Vehicle Weight (tons) x Traffic Component (%)

(Note that the summation of the component vehicle weight equals the Mean Vehicle Weight.)

VMT(miles/yr) = 1,400 ft/trip x 1 mile/ 6076.1 ft x Total Trip Numbers (trips/yr)

PTE of PM/PM10 (tons/yr) = VMT (miles/yr) x Emission Factors (lbs/mile) x 1 tons/ 2000 lbs

PTE of PM/PM10 (tons/yr) = VMT (miles/yr) x Emission Factors (lbs/mile) x 1 tons/ 2000 lbs

3. Potential to Emit (PTE) of PM/PM10 after Control from Unpaved Roads:

The source proposed to use wet suppression to control fugitive dust emissions. The control efficiency from wet suppression is assumed to be 90%.

$$\text{PTE of PM after Control} = 314 \text{ tons/yr} \times (1-90\%) = 33.0 \text{ tons/yr}$$

$$\text{PTE of PM10 after Control} = 67.7 \text{ tons/yr} \times (1-90\%) = 7.12 \text{ tons/yr}$$